Tucson Electric Power Company
220 West Sixth Street, Post Office Box 711
Tucson, Arizona 85702

Area Code 602
Telephone 571-4000

February 14, 1995

S-0000-95-084

Mr. Grant Woods, Chairman
Arizona Power Plant & Transmission
Line Siting Committee
Arizona Corporation Commission
1200 West Washington
Phoenix, AZ 85007

Dear Mr. Woods:

Enclosed are twenty-five (25) copies of Case No. 84, an Application for Certificate of Environmental Compatibility, for approval of the location of a twenty six and three-tenths (26.3) mile 138-kV transmission line system extending from the existing Tucson Electric Power Company (TEP) South Substation near the Santa Cruz River and Pima Mine Road through the proposed 138-kV Green Valley Substation near Old Nogales Highway and Continental-Whitehouse Canyon Road to the existing Cyprus-Sierrita Substation located near the Cyprus-Sierrita Mine Concentrator. Two copies have been marked "Original Signature Copy" and are for your permanent file.

Also enclosed is our check in the amount of $1,000 made payable to the Utility Siting Fund to cover the filing fee for this application as specified in ARS Section 40-360.09 (6), and a letter from the Green Valley Community Coordinating Council requesting that the Public Hearing be held in the Green Valley area.

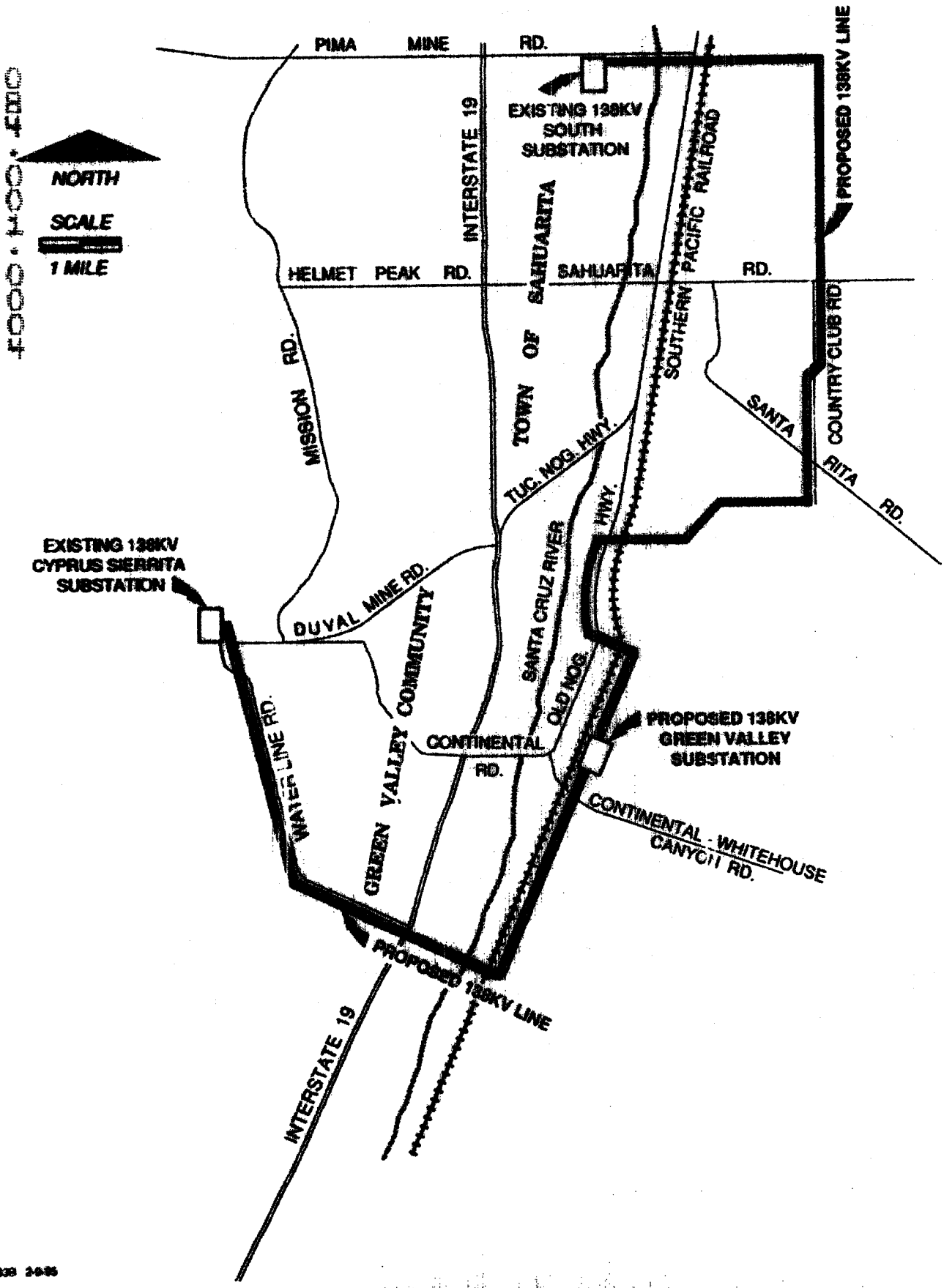
We are looking forward to receiving the notice establishing a hearing date, and support the request for the hearing to be held in the Green Valley area. If there are any questions which you have regarding this application, please do not hesitate to contact me at 745-7126.

Sincerely,

H. Duane Bock

H. Duane Bock
Manager, Environmental Systems

HDB:n
Enclosures


PIMA MINE RD.
EXISTING 138KV SOUTH SUBSTATION
INTERSTATE 19
SAHUARITA
SOUTHERN PACIFIC RAILROAD
PROPOSED 138KV LINE
NORTH
SCALE
1 MILE
HELMET PEAK RD.
SAHUARITA RD.
MISSION RD.
TOWN OF
TUC. NOG. HWY.
SANTA RITA
COUNTRY CLUB RD.
RD.
EXISTING 138KV CYPRUS SIERRITA SUBSTATION
DUVAL MINE RD.
SANTA CRUZ RIVER
HWY.
OLD NOG.
WATER LINE RD.
GREEN VALLEY COMMUNITY
CONTINENTAL RD.
PROPOSED 138KV GREEN VALLEY SUBSTATION
CONTINENTAL - WHITEHOUSE CANYON RD.
PROPOSED 138KV LINE
INTERSTATE 19

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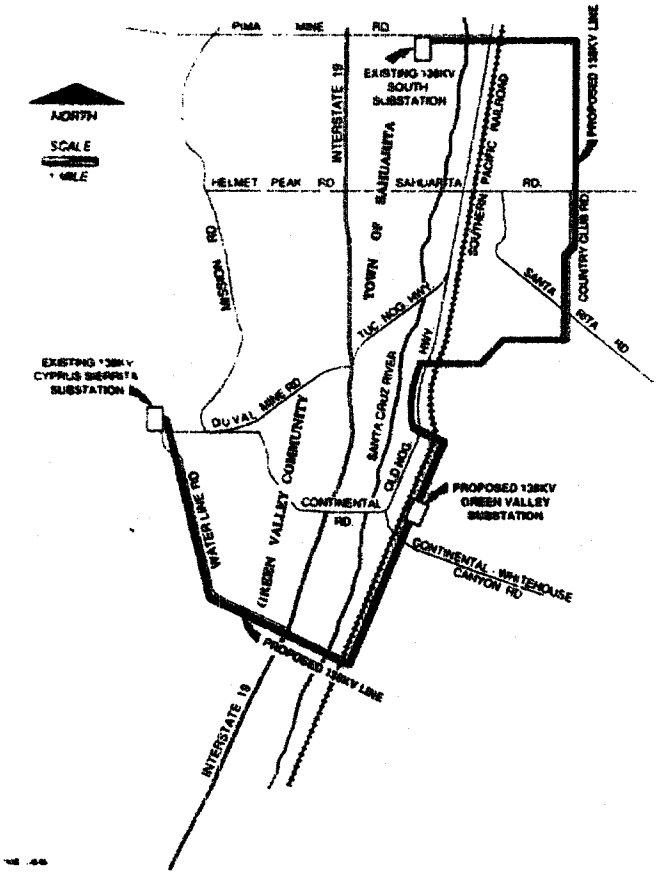
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OLD NOG.
PROPOSED 138KV GREEN VALLEY SUBSTATION
WATERLINE RD
CONTINENTAL WHITEHOUSE CANYON RD
PROPOSED 138KV LINE
INTERSTATE 19

Before the
POWER PLANT AND TRANSMISSION LINE SITING COMMITTEE

In re TUCSON ELECTRIC POWER COMPANY'S request to approve this Application for the location of a 138 kV Transmission Line System consisting of a 138 kV transmission line beginning at the existing TEP South Substation on Pima Mine Road in Section 36, Township 16 South. Range 13 East; thence running easterly approximately 2.4 miles to Country Club Road; thence southerly along an existing Arizona Electric Power Co-operative (AEPCO) line approximately 5.6 miles; thence west and southwesterly along the same AEPCO line approximately 2.3 miles to the Old Nogales Highway; thence south along the Old Nogales highway approximately 3.8 miles to the proposed 138 kV TEP Green Valley Substation located in the northwest 1/4 of Section 24, Township 18 South, Range 14 East; thence southerly along the SPRR tracks approximately 3.7 miles; thence northwesterly across the Santa Cruz River, I-19 and along the Duval Mine Waterline Road approximately 8.5 miles to the existing TEP Cyprus Sierrita Substation located in Section 10, Township 18 South, Range 12 East, for a total distance of 26.3 miles, all within Pima County, Arizona.	)	Case No. 84

INTRODUCTION

The following is an application for the approval of this Application and for the Certificate of Environmental Compatibility involving a 26.3 mile segment of a 138 kV transmission line and the development of a 138 kV substation.

The proposed transmission line would originate at the Applicant's South Substation, located just south of Pima Mine Road, Pima County, Arizona in Section 36, T16S, R13E, G&SRB&M.

The transmission line would proceed easterly approximately 2.4 miles along an existing utility easement to Country Club Road and the existing AEPCO 230 kV alignment, where it turns south and follows this alignment for approximately 5.6 miles, continuing west and southwest for 2.3 miles, returning to the Old Nogales Highway at the southwest corner of the NW1/4 of Section 31, T17S, R14E where it turns south and following the highway for 3.8 miles enters the Green Valley Substation which is located in the Canoa Land Grant, north of the Continental - Whitehouse Canyon Road and east of the Southern Pacific Railroad (NW1/4 of Section 24, T18S, R14E).

To complete the 138 kV loop to the Cyprus Sierrita Substation, the transmission line would leave the Green Valley Substation and proceed south and southwest along the existing Tucson Electric Power Company's right-of-way paralleling the SPRR right-of-way for approximately 3.7 miles to the NW1/4 of the SE1/4 of Section 3, T19S, R13E, where it turns west and northwest crossing the Santa Cruz River, I-19 and following the Duval Mine Waterline Road for a total distance of approximately 8.5 miles where the transmission line enters the Cyprus Sierrita 138 kV Substation (southwest corner of the NE1/4 of Section 10, T18S, R12E).

The proposed facilities are designed to serve the growing electrical needs of Tucson Electric Power's customers in the Green Valley, Elephant Head and Continental areas, and to strengthen service reliability and capacity. The facilities are proposed to be under construction and the first phase in service by mid 1996 and phase two, the completion of the loop interconnect, is currently beyond the scope of the 10 year budget.

The study process leading to the selection of the routes contained in this Application began in late 1992. Over the course of the project, route alignments were evaluated by RCS Environmental & Planning Consultants as they related to possible substation sites that fit the load and distribution criteria established by Tucson Electric Power Company. Detailed studies were then conducted for selected routes as indicated in the Application.

Construction of the facilities referred to in this Application will conform with all existing laws, codes, rules and regulations, and those additional considerations outlined in Applicant's "Policy Criteria on Substation Siting" and "Standard Environmental Protection Provisions Section" contained in all bid documents relating to transmission line and substation construction.

Tucson Electric Power Company and its consultants believe that the route and the substation site proposed in this Application are "environmentally compatible" in that their selection considered all of the factors listed in A.R.S. 40-360.06. On the basis of the inventory, analysis, public contacts, neighborhood and property owner meetings, and Pima County hearing, the Applicant requests the approval of this Application.

TABLE OF CONTENTS

I. APPLICATION

1.0 Name and Address of the Applicant

Tucson Electric Power Company
P.O. Box 711
Tucson, Arizona 85702

2.0 Applicant Representative with Resource Information

Name, address and telephone number of a representative of the Applicant who has access to technical knowledge and background information concerning this application, and who will be available to answer questions or furnish additional information:

H. Duane Bock, Manager Environmental Systems
220 W. Sixth
Tucson, Arizona 85702
745-7126

3.0 Filing Date of Ten-Year Plan

State each date on which the Applicant has filed a ten-year plan in compliance with ARS Section 40-360.02, and designate each filing in which the facilities for which this application is made were described:

In compliance with ARS Section 40-360.02, Tucson Electric Power Company has filed a Ten-Year Plan on the following dates:

February 1, 1972	January 25, 1984
January 30, 1973	January 31, 1985
January 31, 1974	January 31, 1986
January 31, 1975	January 30, 1987
January 31, 1976	January 29, 1988
January 25, 1977	January 31, 1989
January 13, 1978	January 31, 1990
August 24, 1979	January 31, 1991
January 25, 1980	* January 29, 1992
January 29, 1981	* January 29, 1993
January 29, 1982	* January 28, 1994
January 28, 1983	* January 27, 1995

* Indicates the Ten-Year Plans which included the South Substation to Cyprus Sierrita Substation through Green Valley Substation.

4.0 Description of Proposed Facilities

4.a *Not applicable to a transmission line*

4.b.1 ***Nominal voltage for which the line is designed; description of the proposed structures and switchyards or substations associated therewith; and purpose for constructing said transmission line.***

Nominal voltage for which the line is designed.

138,000 volts (138 kV) design voltage.

Description of the proposed structures

The proposed transmission line is approximately 26.3 miles long and is designed for operation at a nominal voltage of 138 kilovolts (kV). The conductors are supported by a variety of structures.

South Substation to Green Valley Substation (Phase I)

The proposed line proceeds from South Substation, east for a distance of 0.9 miles to Old Nogales Highway. In this segment a double circuit 138 kV line on single pole structures (Exhibit G-1.4) will replace an existing single circuit 138 kV line on double pole structures. Continuing east for 1.5 miles to Country Club, then south and southwest for 7.9 miles, adjacent to the AEPCO 230 kV transmission line to Old Nogales Highway, the proposed line will be a single circuit 138 kV line on single pole structures (Exhibit G-1.1). In this segment the facilities are proposed to replicate the span and structure location of the existing AEPCO 230 kV line where possible. Continuing south approximately 3.8 miles to the existing Green Valley Substation, the proposed line will be a double circuit 138 kV and 46 kV with 14 kV underbuild on single pole structures (Exhibit G-1.5).

Green Valley Substation to Cyprus Sierrita Substation (Phase II)

From the Green Valley Substation south for 3.7 miles, then west for 1.0 miles, crossing the Santa Cruz River until reaching Interstate I-19, the proposed line will be a double circuit 138 kV and 46 kV with 14 kV underbuild on single pole structures (Exhibit G-1.5). To the west of Interstate I-19 and through a residential area for approximately 1.0 miles, will be a single circuit 138 kV line on single pole steel structures no higher than the existing pole height (Exhibit G-1.1). To accommodate this, the existing 14 kV system will be placed underground for the one mile segment. In the last segment following Duval Mine Waterline Road for 6.5 miles to Cyprus Sierrita Substation, here the proposed line will be a double circuit 138 kV and 46 kV system on single pole structures (Exhibit G-1.4).

Proposed Substation

The proposed 138 kV transmission line corridor is routed to the existing Green Valley Substation (46 kV) located in the NW1/4 of Section 24, Township 18 South, Range 13 East.

The enclosure of the existing 46 kV substation will be expanded to the north and east to accommodate the 138 kV electrical equipment to be placed at this site. The equipment will consist of conductor support or termination structures, lightning protection structures, circuit breakers, transformers, switches and associated equipment. The communication (microwave) equipment and control equipment shelter exists and will be upgraded where necessary for the expansion of the 138 kV system. These structures will be mounted on concrete foundations, and the remaining substation area within the secured equipment area will be a stabilized surface. Applicant proposes to construct conductor support and lightning protection structures at the lowest height consistent with sound engineering practices. With the exception of the lightning protection structures and the existing communications mast, the new structures will not exceed 14' from the pad grade of the substation site.

The new area of the substation will be enclosed by a continuation of the 10' high chainlink fence which surrounds the existing substation. The context of the site is primarily undeveloped land. Immediately on the west is the Southern Pacific Railroad right of way. The balance of the adjacent property is fallow farm land bisected by shallow washes flowing southeast to northwest from the transitional foothills to the drainage structures penetrating the SPRR roadbed. Based on our hydrological studies indicating some backwater effect and discussions with the property owners of the adjacent land, we believe that the site will be either in a recreational area or under an openspace designation allowing a developer to maximize cluster densities along the foothill ridges.

Purpose for Constructing Facilities

Planning studies led to the conclusion that the optimal means to serve the growing electrical loads in the Green Valley area and to prevent overloading of Tucson Electric Power Companies transmission elements would be to construct an overhead 138 kV transmission line to link the Green Valley Substation to the South Substation and the Cyprus Sierrita Substation and to expand the existing Green Valley Substation to accommodate a 138 kV system. As identified in Applicant's ten-year plan, these facilities will be utilized to provide increased reliability to the growing load in the Upper Santa Cruz portion of the Tucson Electric Power Company service area.

4.b.2 ***Description of geographical points between which the transmission line will run, the straight-line distance between such points and the length of the transmission line for each alternative route for which application is made.***

Geographical Location

a) Preferred Route - Country Club Road Alignment

The proposed transmission line would originate at the Applicant's South Substation, located just south of Pima Mine Road, Pima County, Arizona in Section 36, T16S, R13E, G&SRB&M.

The transmission line would proceed easterly approximately 2.4 miles along an existing utility easement to Country Club Road and the existing AEPCO 230 kV alignment, where it turns south and follows this alignment for approximately 5.6 miles, continuing west and southwest for 2.3 miles, returning to the Old Nogales Highway at the southwest corner of the NW 1/4 of Section 31, T17S, R14E where it turns south and following the highway for 3.8 miles enters the Green Valley Substation which is located in the Canoa Land Grant, north of the Continental - Whitehouse Canyon Road and east of the Southern Pacific Railroad (NW1/4 of Section 24, T18S, R14E).

To complete the 138 kV loop to the Cyprus Sierrita Substation, the transmission line would leave the Green Valley Substation and proceed south by southwest along the existing Tucson Electric Power Company's right-of-way paralleling the SPRR right-of-way for approximately 3.7 miles to the NW1/4 of the SE1/4 of Section 3, T19S, R13E, where it turns west by northwest crossing the Santa Cruz River, I-19 and following the Duval Mine Waterline Road for a total distance of approximately 8.5 miles where the transmission line enters the Cyprus Sierrita 138 kV Substation located in NE1/4 of Section 10, T18S, R12E.

b) Alternate Route No. 1 - Old Nogales Highway Alignment

From the South Substation this alignment is contiguous with the preferred route for the first 0.9 miles easterly to the Old Nogales Highway where it turns south along the westerly side of the highway right of way for 6.3 miles where it intersects the preferred route coming in to the highway alignment from the east at the southwest corner of the NW1/4 of Section 31, T17S, R14E.

c) Alternative Route No. 2 - Santa Cruz River Alignment

This alternative route proceeds east 0.2 miles to the Santa Cruz River from South Substation where it turns south for approximately 2.4 miles and then west 0.4 miles to a point near the southwest corner of the NW1/4 of Section 12, T12S, R13E, then south along the Santa Cruz River an approximate distance of 3.9 miles to a node in the system where the alternate route and the preferred route intersect near the southwest corner of the NW1/4 of Section 31, T17S, R14E. At this node the segment to the Green Valley Substation is contiguous with the preferred route.

d) Alternative Route No. 3 - Canoa / Via Cielo Azul Loop Alignment

At the turning point where the Preferred Route bears northwest approximately 3.7 miles south by southwest of the Green Valley Substation site this alternative route continues along the easterly edge of the Santa Cruz floodway for 3.6 miles following the existing Tucson Electric Power Companies 46 kV easement and turns to the northwest at a point near the middle of the NE1/4 of Section 20, T19S, R13E. From this point the route crosses the Santa Cruz River, I-19 and continues 1.2 miles to the westerly edge of the Ignacio de la Canoa Land Grant where it turns north by northeast for approximately 3.7 miles connecting to the Via Cielo Azul Road right of way to the turning point of the preferred route at the southwest corner of the NW 1/4 of Section 33, T18S, R13E. The total length of this segment is 8.5 miles.

Straight line distance between such geographical points

Route	South to Green Valley	Green Valley to Cyprus Sierrita	Total
Preferred Route	14.1 miles	12.2 miles	26.3 miles
Alternative Route 1	11.0 miles	12.2 miles	23.2 miles
Alternative Route 2	10.7 miles	12.2 miles	22.9 miles
Alternative Route 3	14.1 miles	18.7 miles	32.8 miles

4.b.3 Nominal width of right-of-way required, nominal length of spans, maximum height of supporting structures and minimum height of conductor above ground.

Dimensional Data

Nominal Right-of-Way Width	50 - 150 ft.*
Nominal Span Length	425 - 1,100 ft.
Average Height of Structures	75 ft.
Maximum Height of Structures	85 ft.
Minimum Ground Clearance of Conductors	27 ft.

* The right-of-way width at the entrance to the Green Valley Substation and the additional right-of-way width required when the proposed transmission line is adjacent to an existing system right-of-way is generally 50'. The right-of-way widths along the major routes and arterials is 150' or designated to be such width by the Pima County Department of Transportation in the adopted major routes and arterial master plan.

4.b.4 To the extent available, the estimate of proposed costs of proposed transmission line and route, stated separately. (If application contains alternative routes, furnish an estimate for each route and a brief description of the reasons for any variations in such estimates.)

Estimate of Probable Cost

Route	Length (mi.)	Material & Labor	Right of Way	Total Cost	Cost per mile
Preferred Route	26.3	7,310,000	2,140,000	9,450,000	359,316
Alternative Route 1	23.2	7,650,000	3,440,000[1]	11,090,000	478,017
Alternative Route 2	22.9	8,030,000[2]	2,432,000[1]	10,462,000	456,856
Alternative Route 3	32.8	9,340,000[3]	2,520,000	11,860,000	361,585

[1] Loss of cultivated lands to Farmer's Investment Company has not been included as a factor and could increase the cost of right-of-way acquisition by a factor of 2 to 3 according to the appraiser, providing a range from 1,200,000 to 3,000,000. We have therefore used an average when evaluating the potential R.O.W. cost.

[2] The materials and labor cost are elevated because of the additional cost attributed to the installation of the structures within the flood plain.

[3] 3.6 miles of this alignment are within the flood plain and the cost are higher as discussed in 2 above. Additionally, the westerly segment is adjacent to several small parcels that with the increased right of way requirements would necessitate the outright purchase of those parcels.

4.b.5 *Description of proposed route and switchyard locations. (If application contains alternative routes, list routes in order of applicant's preference with a summary of reasons for such order of preference and any changes such alternative routes would require in the plans reflected in 1-5 hereof.)*

Description of the Proposed and Alternative Routes

The location of the Preferred Route as shown in Exhibit A-3.1 is considered by the Applicant to be the most feasible route for construction of the transmission line. The transmission line originates at the Applicant's South Substation, located just south of Pima Mine Road Pima County, Arizona in Section 36, T16S, R13E, G&SRB&M.

The route proceeds easterly approximately 2.4 miles along an existing utility easement, to Country Club Road and the existing AEPCO 230 kV alignment, where it turns south and follows this alignment for approximately 5.8 miles, continuing west and southwest for 2.4 miles returning to the Old Nogales Highway near the southwest corner of the NW1/4 of Section 31, T17S, R14E where it turns south and following the highway for 3.8 miles and enters the Green Valley Substation which is located in the Canoa Land Grant, north of the Continental - Whitehouse Canyon Road and east of the Southern Pacific Railroad (NW1/4 of Section 24, T18S, R14E).

The 138 kV interconnect to the Cyprus Sierrita Substation from the Green Valley Substation proceeds south by southwest along the existing Tucson Electric Power Company's right-of-way paralleling the SPRR right-of-way for approximately 3.5 miles where it turns west by northwest crossing the Santa Cruz River, I-19 and following the Duval Mine Waterline Road for approximately 8.8 miles where the transmission line enters the Cyprus Sierrita 138 kV Substation located in NE1/4 of Section 10, T18S, R12E.

In the Applicant's opinion, the Preferred Route is the most feasible alignment because of the considerations listed below:

A. Over 60% of the Preferred Route alignment utilizes existing 46 kV alignments with adequate right-of-way widths to accommodate the proposed 138 kV transmission line. The balance of the alignment follows existing transmission line easements, but will require the acquisition of additional adjacent right-of-way width.

B. The visual affects are minimized by using low profile pole systems, delta configurations of the conductors that have been found to be less obtrusive and low reflectance conductors along with reducing the number of poles within some segments in urban areas.

C. The biological consultant found the Preferred Route acceptable.

D. The archeological consultant has stated that the Preferred Route is acceptable. The archeological and historic areas found to be significant can be mitigated by either avoidance during the design phase and where the construction may be near peripheral areas, a qualified archeological consultant is to be on site during the excavation operations.

E. The route has the best potential to survive catastrophic flooding and erosion do to natural river dynamics and meander.

F. The route is the least costly to develop.

G. The route has the lowest impact on the residential areas and their viewsheds.

Alternative Route No. 2 - Santa Cruz River Alignment

This alternative route proceeds east to the Santa Cruz River from South Substation where it turns south for approximately 2.4 miles and then west 0.4 miles to a point near the southwest corner of the NW1/4 of Section 12, T17S, R13E, then south along the Santa Cruz River an approximate distance of 3.9 miles to a node in the system where the alternate route and the preferred route intersect near the southwest corner of the NW1/4 of Section 31, T17S, R14E. At this node the segment to the Green Valley Substation is contiguous with the preferred route.

Alternative Route No. 2 is the second route in order of preference on the basis of the following considerations:

A. The route traverses an area adjacent to cultivate lands that require aerial applications of pollen and chemicals. The alignment would impact this land use in some areas.

B. More than 6 miles of the route are to be constructed within the floodplain of the Santa Cruz River, thus footings and structure design are more costly.

C. The alignment is on the west bank of the Santa Cruz River and the pole structures have a greater visual impact on the adjacent residential areas to the west of the river.

Alternative Route 1 - Old Nogales Highway Alignment

From the South Substation this alignment is contiguous with the preferred route for the first 0.9 miles easterly to the Old Nogales Highway where it turns south along the westerly side of the highway right of way for 6.3 miles where it intersects the preferred route coming in to the highway alignment from the east at the southwest corner of the NW1/4 of Section 31, T17S, R14E.

The factors considered during the evaluation process identified the same considerations as for Alternative Route 2 with the primary differences as follows:

A. This route adversely impacts existing and proposed land use to a greater extent than all of the other alternatives.

B. The cost of materials and labor is less per mile than for the Santa Cruz River alternative because of soil conditions and little floodplain effect on the design of the structures.

C. The cost of right of way is quite variable. There are several commercial parcels that are small and the right of way requirements impact the sites to the extent that the entire parcel may have to be acquired. The negotiations with Farmers Investment Company would be convoluted and difficult to resolve in the time frame for phase one construction. The appraisal did not consider the loss of cultivated land and the owners estimate of value of its land could increase the cost of acquisition three fold. Additionally there are some parcels of State Land. This route will have the most difficult and possibly the most costly right of way acquisition of any of the alternative routes.

Alternative Route No. 3 - Canoa / Via Cielo Azul Loop Alignment

At the turning point where the Preferred Route bears northwest approximately 3.8 miles south by southwest of the Green Valley Substation site this alternative route continues along the easterly edge of the Santa Cruz floodway for 3.6 miles following the existing Tucson Electric Power Companies 46 kV easement and turns to the northwest at a point near the middle of the NE1/4 of Section 20, T19S, R13E. From this point the route crosses the Santa Cruz River, I-19 and continues to the westerly edge of the Ignacio de La Canoa Land Grant where it turns north by northeast for

approximately 3.5 miles connecting to the Via Cielo Azul Road right of way to the turning point of the preferred route at the southwest corner of the NW1/4 of Section 33, T18S, R13E. The total length of this segment is 8.5 miles.

The considerations relating to this route were as follows:

A. The length of this route is over 6 miles longer than the next longest route. The effect of this is seen in the increased extent of the visual impact, the larger number of residences effected and the higher cost of construction and right of way acquisition.

B. Additional cost is incurred to construct within the flood plain.

This route was deleted from further consideration after the mid-study evaluation was completed and the environmental factors were considered.

4.b.6 For each alternative route for which application is made, list the ownership percentages of land traversed by the entire route (Federal, State, Indian, private, etc.).

Land Ownership

	Proposed Route	Alt. No.1	Alt. No.2
Private	68.0%	100.0%	100.0%
Federal	0.0%	0.0%	0.0%
State	32.0%	0.0%	0.0%
Indian	0.0%	0.0%	0.0%

Percent of Total

100% of the preferred route is located within or adjacent to existing utility easements, public or private road rights-of-way.

5.0 Areas of Jurisdiction

List the areas of jurisdiction [as defined in A.R.S. Section 40-360(1)] affected by each alternative site or route and designate those sites or routes, if any, which are contrary to the zoning ordinances or master plans of any of such jurisdiction.

The jurisdiction along the proposed route is Pima County, as indicated on Exhibit A-4.1

The applicant's investigations indicate that neither the Preferred Route nor the Preferred Substation Site are contrary to any comprehensive plan or area plan. On February 7, 1995 the preferred substation site and a waiver of setback conditions was approved by the Pima County Board of Supervisors. The land adjacent to the site on the west consists of Pima County dedicated road right of way and the Southern Pacific Railroad - Tucson to Nogales railroad right-of-way. The property to the south, east and north is under single ownership and has been master planned as open space on all sides of the preferred site. The land use will remain as planned since the approved development plan allowed the developer to develop the ridges to the east at a higher density based on a density transfer. As such the area adjacent to the Green Valley Substation cannot be developed for residential uses and appears that the best use will remain open space or recreation.

6.0 Environmental Studies

Describe any environmental studies the applicant has performed or caused to be performed in connection with this application or intends to perform or cause to be performed in such connection, including the contemplated date of completion.

At the onset of the licensing studies associated with the proposed project, various departments within Tucson Electric Power and the environmental consultant - RCS Engineering and Environmental Consultants - defined a project study area and identified potential alignments to connect the existing South 138 kV Substation and the Cyprus Sierrita 138 kV Substation via a group of potential substation sites at the centriod of the demand based on demographic and land use studies. Potential alignments where identified by attempting to maximize the utilization of the existing utility corridors and attempting to minimize the potential impacts to existing and future land use patterns.

The following environmental factors were considered essential in the corridor and site selection process:

Geology, Seismic, Soils, and Ground Subsidence
Meteorology & Air Quality
Hydrology
Vegetation
Wildlife
Archeological and Historic Sites
Ambient Noise & Radio and TV Interference
Aesthetics & Visual Analysis

7.0 Proposed Route

All of the proposed route is located within or adjacent to existing transmission lines or a public or private road right-of-ways. Only low impacts may be expected within the agricultural areas. No sensitive uses are likely to develop, based on current and comprehensive land use plans that have been adopted by the governing bodies. No adverse impact is expected due to the presence of a transmission line of equal size and characteristics within the urbanized areas of the proposed route. No significant impacts to cultural or biological resources are expected along this route.

The proposed route and substation site has been found by Tucson Electric Power Company and the environmental consultant to be within generally accepted norms to deem this project "environmentally compatible" as represented in previous siting decisions in both Pima County and the State of Arizona.

Tucson Electric Power Company

By H. Duane Bock
H. Duane Bock
Manager Environmental Systems

I certify that on this 14th day of February, 1995, I have delivered to the Arizona Corporation Commission 25 copies of this Application for Certificate of Environmental Compatibility.

By H. Duane Bock

II. EXHIBITS

EXHIBIT A

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

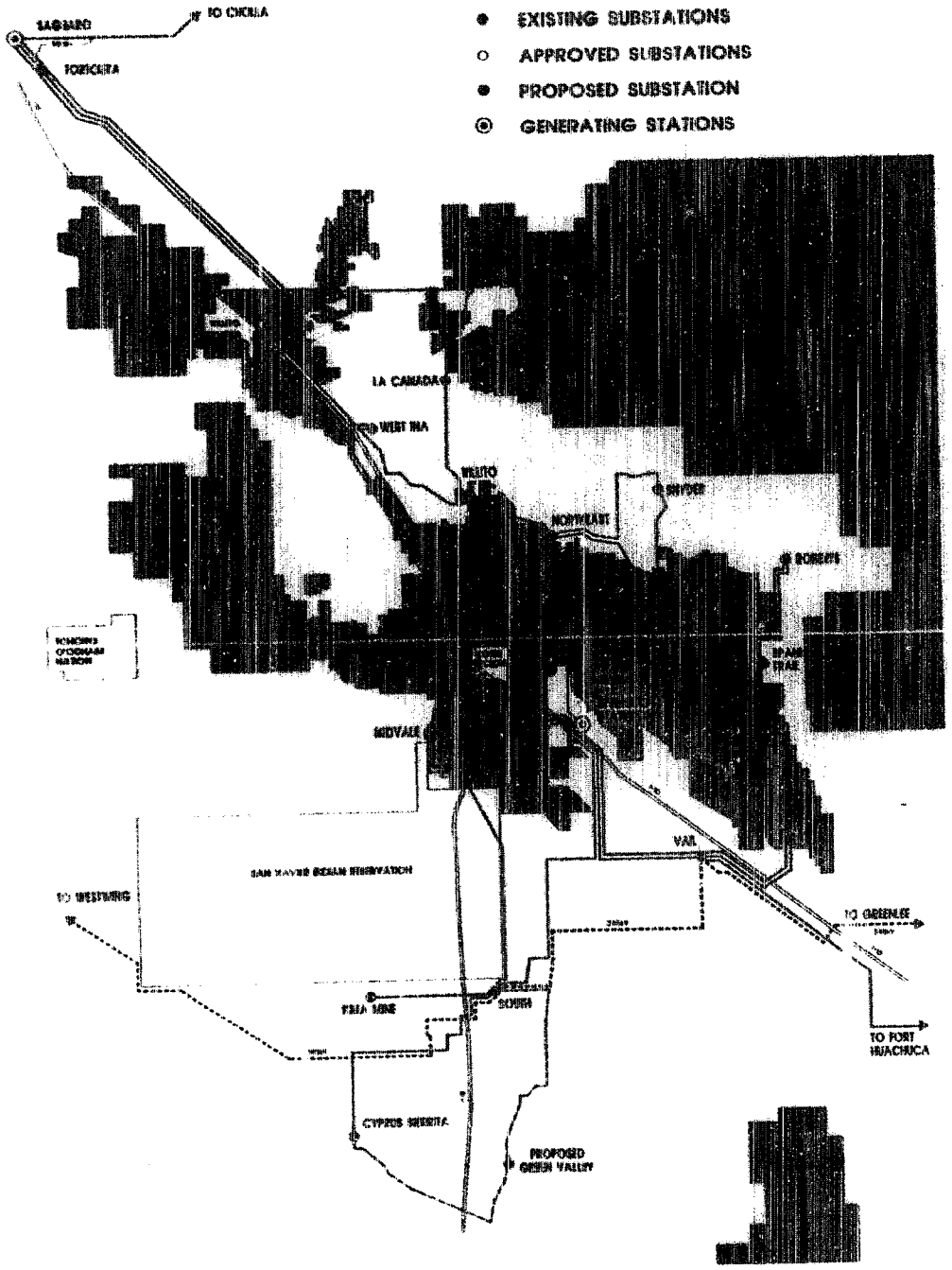
EXHIBIT A

ALTERNATE ROUTE ALIGNMENT, TOPOGRAPHY JURISDICTIONAL AREAS, EXISTING LAND USE AND LAND USE PLAN

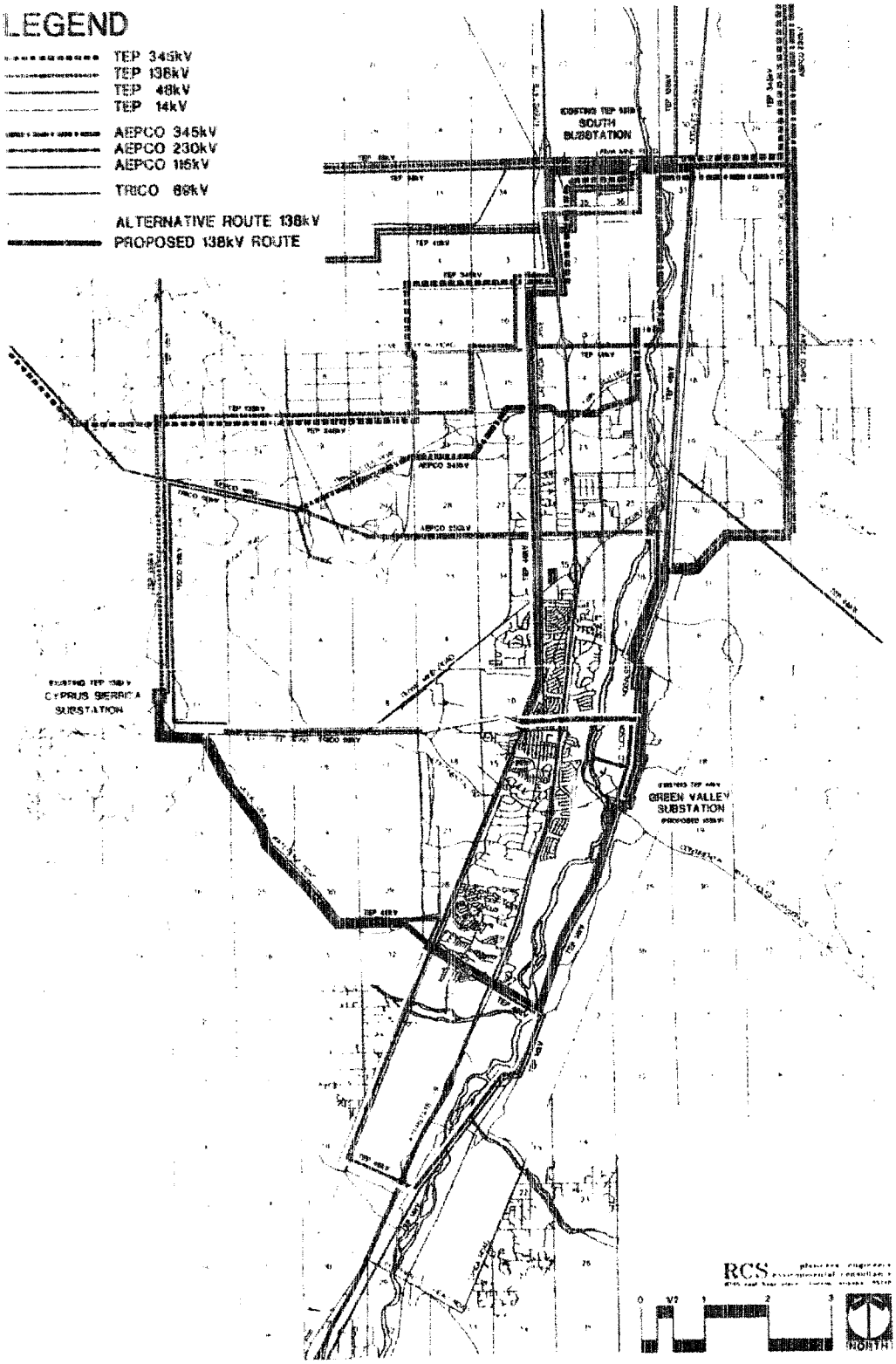
CONTENTS

LEGEND

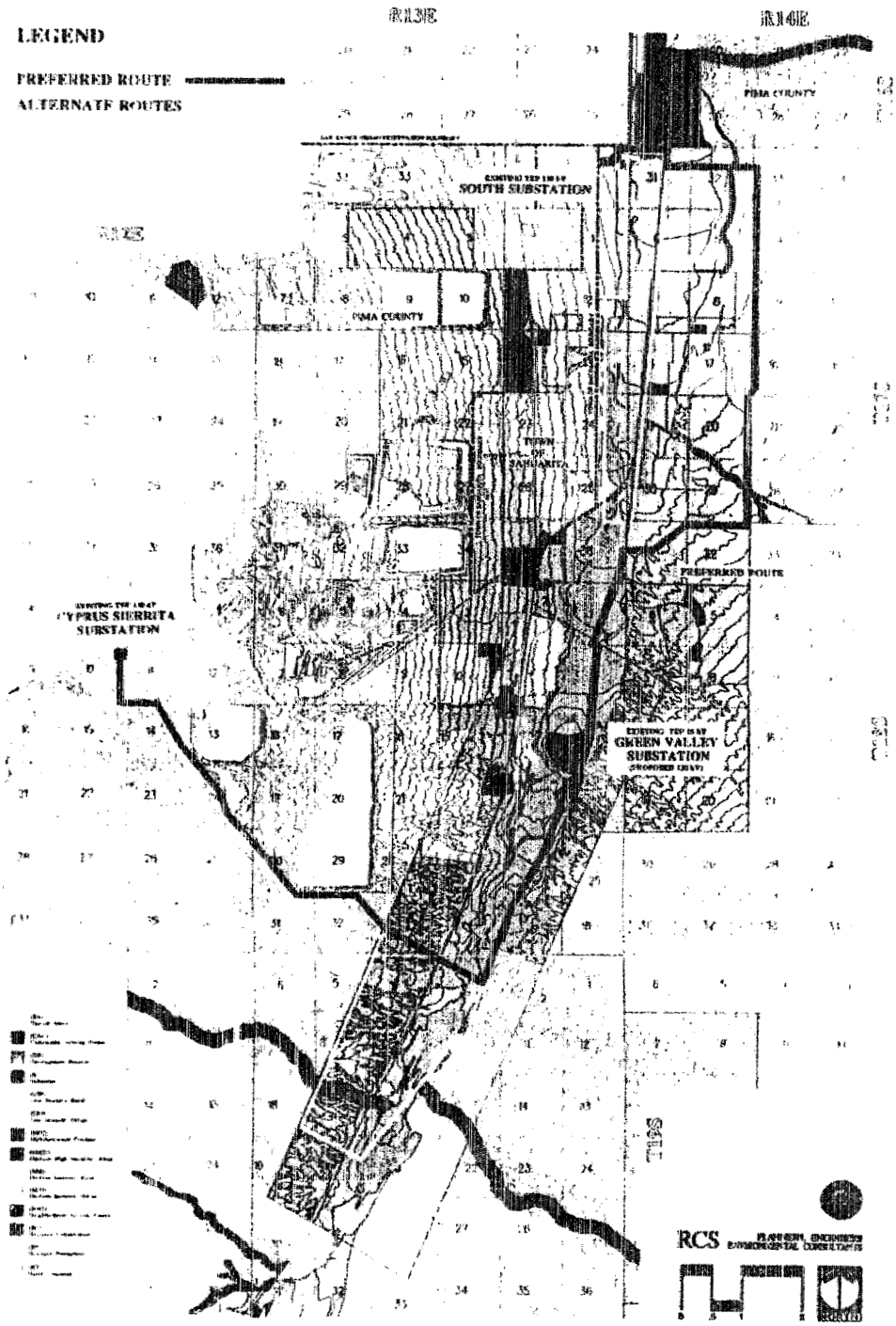
- 138kV EXISTING H.V. TRANSMISSION LINE
- 138kV PROPOSED OR APPROVED H.V. TRANSMISSION LINE
- 345kV EXISTING EHV TRANSMISSION LINE
- ● EXISTING SUBSTATIONS
- ○ APPROVED SUBSTATIONS
- ● PROPOSED SUBSTATION
- ◉ GENERATING STATIONS



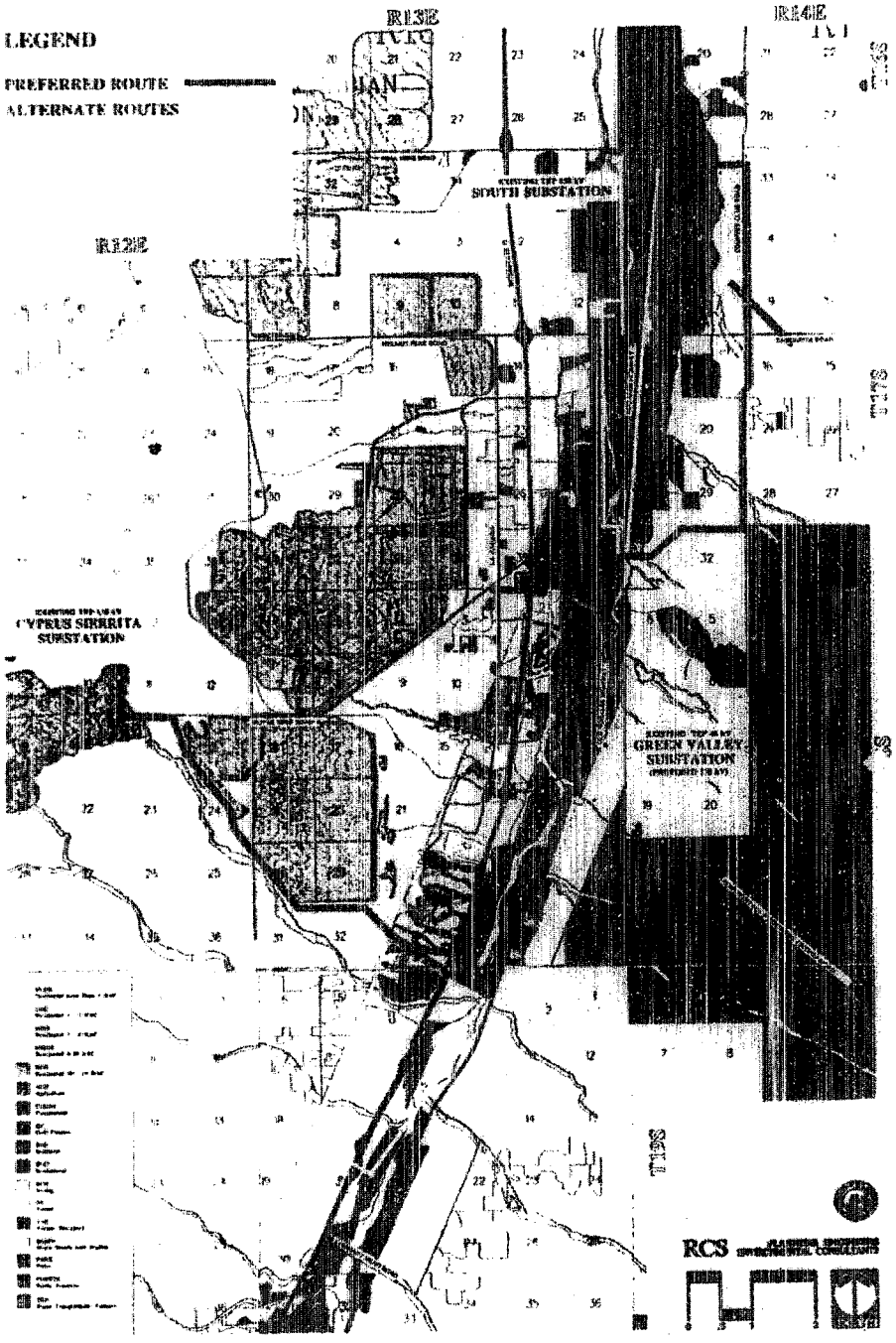
138kV Green Valley Substation and Transmission Lines	138kV Transmission Line System	Exhibit No. A-3.0



138kV Green Valley Substation and Transmission Lines	Route Alignments and Service Area	Exhibit A-3.1



138kV Green Valley Substation and Transmission Line	Topography Jurisdictional Areas and Existing Land Use	Exhibit A-4.1



138kV Green Valley Substation and Transmission Line	Comprehensive Land Use Plan	Exhibit A-4.2

EXHIBIT B

ENVIRONMENTAL ANALYSIS

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT B

ENVIRONMENTAL ANALYSIS

CONTENTS

"Attach any environmental studies which Applicant has made or obtained in connection with the proposed sites or routes. If an environment report has been prepared for any Federal agency or if a Federal agency has prepared an environmental statement pursuant to Section 102 of the National Environmental Policy Act, a copy shall be included as a part of this exhibit."

INTRODUCTION

Tucson Electric Power Company (TEP) is required under public law to provide adequate and reliable electric service to all customers within its services area. To insure that this service is provided in a timely manner, the Applicant files an updated Ten Year Plan annually to the Arizona Corporation Commission. The most recently filed Ten Year Plan identifies the need for a 138 kV substation and associated transmission lines to serve the rapidly developing area in the Green Valley area and to provide looped reliability to the system within that region. Boundaries of the study area were established according to Arizona Corporation Commission regulation R14-3-219 which requires mapping subdivided areas within two miles of proposed transmission lines. The resulting study area is an irregular area encompassing over 230 square miles as shown in Exhibits A-1 through A-4. An essential part of the project development is the analysis of environmental effects of such a project. The following is an environmental analysis completed by the Applicant.

Studies concerning land use, biological resources, and cultural resources were conducted for this project. A range of alternative routes were identified and general field investigations performed for the various alternative alignments. Initially routes within or immediately adjacent to existing above ground electric facilities were given a priority, followed by routes that were shorter, or traversed areas with less dense populations. Subsequently, selected routes were abandoned and others adjusted after the results of a cost analysis and specific environmental studies indicated unacceptable impacts.

The exhibits that follow contain the results of investigations conducted and conclusions relating to the environmentally acceptable Preferred Route and expansion of the Green Valley 46 kV Substation to a 138 kV capacity as the Preferred Site for this facility.

B-1 GEOLOGY, SEISMIC, SOILS & GROUND SUBSIDENCE

B-1.1 GEOLOGY

The Preferred 138 kV transmission line and Substation Site are located in the relatively flat southern range of the Tucson Basin. The Tucson Basin is a typical basin found within the Basin and Range Physiographic Province of the Western United States. The Basin and Range Province is composed of mountain ranges that are separated by large valley basins consisting of unconsolidated porous sediments of great depth.

The Santa Rita Mountains lie adjacent to the area of study and are well developed, generally pyramidal, volcanic and igneous crystalline rock intrusions. Extensive volcanism, blockfaulting and general uplift in the last Tertiary provided deep northwest-southwest trending troughs between the mountains that were partly dammed by lava flows filled with porous sedimentary deposits ranging from boulders to silts; then capped and redammed by other lava flows. This process continued until the early Quaternary, when extensive erosion took place and the present landscape began to make itself evident.

Intense erosion has resulted in sweeping pediments and peripediments that extend from the mountain slopes to the valley floors. Above the pediments, the mountain slopes are very steep, commonly in excess of 45 degrees. Although the mountains are 4 to 6 miles distant, they generally dominate the scenic vistas of the region. The Santa Rita Mountains rise approximately 5,000 to 6,000 relative to the substation site with the peak of Mt. Wrightston rising to 9,453 above sea level.

The proposed facilities lie within the Santa Cruz River alluvial plain at an elevation of approximately 2,865 feet above Mean Sea Level (MSL).

The surface of the substation site and transmission line corridor are relatively flat with very little vertical relief. The area is drained by the Santa Cruz River which passes one quarter mile to the west of the Green Valley Substation Site.

The geology of the Preferred transmission line and Substation Site is primarily composed of unconsolidated to semi-consolidated material of mostly water-laid deposits and terrace and channel fill sediments.

The lithology is mostly sand, silt gravel and clay in varying amounts and grades from place to place. These deposits are arranged in sequences of alternating beds with no one sediment type dominant. The deposits are in various degrees of consolidation from loose to a semi-cemented condition. These deposits were derived from flooding and sheetwash caused by the Santa Cruz River with the parent

materials coming from the Santa Rita Mountains to the east and south. The gradation of these deposits varies from loose, coarse sediment in the main and branch channels of the Santa Cruz to relatively fine, well-packed silty and clayey deposits in the upper plain area.

B-1.2 SEISMIC HAZARDS

Earthquakes are infrequent in the south central regions of Arizona. Most earthquakes recorded since 1850 have been very small.

Any recorded ground motions in the Green Valley Service Area are generally caused by large earthquakes occurring in Southern California or Northern Mexico. Seismic impacts from such distant events are often reduced markedly by the shielding resulting from the northwest trend of the faultblocks and by shock energy absorption in the thick sedimentary layers of the unconsolidated intermountane basins. However, Arizona falls within Zone II of the Earthquake Intensity Scale. This means that the area can be subjected to quake activity up to a 7 on the Richter Scale, which is sufficient to cause minor to moderate structural damage to buildings and structures if the events are intense enough and located nearby.

B-1.2.1 Environmental Effect of Proposed Facilities due to Seismic Features

The 138 kV transmission line and substation facilities will be designed for the potential hazard even though the possibility of such seismic activity occurring is low.

B-1.3 SOILS

The soil surface of the Green Valley Service Area is composed of more than thirteen (13) different associations that serve as structural or foundational material for building and as a base for agricultural cultivation (Pima County Planning Department, 1977). The proposed 138 kV transmission line structures and the Green Valley Substation Site lie on Sandy loam soils.

B-1.3.1 Environmental Effect of Proposed Facilities due to Soil Conditions

Applicant intends to conduct additional soil engineering analysis prior to construction of the proposed facilities. However, preliminary data indicate that there are not any unusual constraints to construction of the proposed expansion of the facilities that cannot be corrected through normal engineering practices.

Erosion hazard ratings are moderate. Exceptions include potential stream bank cutting and piping along the Santa Cruz River. Structure locations for the transmission line will avoid these areas.

B-1.4 GROUND SUBSIDENCE HAZARD

Currently the depth to water along the 138 kV transmission line corridor and substation site ranges from 100-160 feet below the surface, with the water table declining between 40-70 feet over a thirty year period. Due to the fact that most of the lithology is comprised of loose unconsolidated to semi-consolidated deposits, almost all of the area on the site that has such deposits are prone to natural compaction and ground settlement from water removal. Most subsidence occurs from soil or porous material compaction and settlement after water has been removed by pumping, vertical infiltration or percolation.

Clay materials are the most susceptible to natural compaction and will settle the most, while the sands, silts and gravels will compact and settle to a lesser degree. Since the yearly water level declines are small, ground subsidence is only a minor concern in this area.

B-1.4.1 Environmental Effect of Proposed Facilities due to Ground Subsidence

It is not anticipated that potential ground subsidence would negatively effect the proposed 138 kV transmission line and substation facilities.

B-2 METEOROLOGY AND AIR QUALITY

Meteorological conditions and background air quality existing along the Preferred 138 kV transmission line corridor and Green Valley Substation Site are discussed in this section.

B-2.1 METEOROLOGY

Four meteorological variables are addressed: (1) temperature, (2) precipitation, (3) humidity, and (4) wind patterns. The discussion is based on data collected at the Tucson International Airport.

B-2.1.1 Temperature

The region is characterized as semi-arid with hot summer and moderate winter temperatures. Temperatures at Tucson International Airport range from a monthly average of 51°F in January to 86°F in June. Readings above 105°F are not infrequent, especially in late June and through July.

B-2.1.2 Precipitation

Approximately 11 inches of precipitation occur annually. Short-term, high intensity summer rainfalls that give rise to heavy runoff are fairly common. Thirty-minute rainfalls depositing from 0.47 to 1.09 inches occur statistically every year at Tucson International Airport. Intense short-term rainstorms that deposit 2.1 inches in 6 hours occur statistically every 5 years as based on National Weather Service data for the Green Valley Site. Limited snowfalls occur each year on or near mountain tops. Snow falls infrequently in valley bottomlands.

B-2.1.3 Humidity

The Tucson area is characterized as an area of low humidity. High humidity conditions, (above 79 percent), occur about 5 percent of all hours on an annual basis. This is only about one-third of the average occurrence typical of most of the United States. Tucson is in the 0 to 30 percent humidity range 45 percent of the time.

B-2.1.4 Wind Patterns

The normal wind pattern within the Tucson Basin is dominated by a mountain-valley circulation pattern. This pattern results from cold air flowing off the surrounding mountains during the night and collecting on the valley floor. This cooler air forces the existing warm air within the valley to rise, creating a night-time temperature inversion which prevents vertical air mixing and results in concentrations of pollutants below the inversion layer. This temperature inversion is broken up during the day by solar heating and resultant shifts in surface wind patterns.

Within the basin, cool surface air normally flows downstream from the southeast to northwest during the night and early morning hours. However, this pattern is reversed during the daylight hours due to solar heating. The warm air moves upslope, rises, and is eventually dispersed at higher elevation by the prevailing winds.

Because the temperature inversion and surface wind patterns are governed to a large extent by solar radiation and regional pressure systems, seasonal variations in these factors have a direct effect upon air quality within the basin. During the winter months high pressure areas located over the northern part of the state generate strong southerly winds which effectively disrupt the local surface wind patterns. In addition, inversion levels usually decrease from 10,000 feet in May to 2,500 feet in December and January because of reductions in solar heating, thereby limiting vertical mixing of air and further concentrating air pollutants. Where these conditions occur, air may become stagnated within the basin for several days, until temperatures increase or pressure systems change.

B-2.2 AIR QUALITY

The proposed 138 kV transmission line and substation site are located in the Upper Santa Cruz Basin. The area surrounding the proposed 138 kV transmission line and proposed expansion of the Green Valley Substation, is classified an attainment area for SO_2, NO_2 and O_3. The Tucson Metropolitan Area is non-attainment for CO and Particulate Matter (PM) by EPA classification.

B-2.2.1 Environmental Effects of Proposed Facilities on Air Quality

Principal impacts on air quality caused by construction and related activities will result from dust and exhaust fumes. Dust from vehicular traffic, construction equipment and grading operations will be controlled by water sprinkling or by methods approved in the Arizona Rules and Regulations for Air Pollution Control and Pima County Regulations. Depending on atmospheric conditions and local wind directions, vehicular and equipment exhaust fumes may be detected on the site. All these conditions, however, will be temporary and no long-term effects will occur. The State of Arizona ambient air quality standard will be maintained during site preparation, notwithstanding those instances when particulate standards might be exceeded because of natural causes unrelated to site preparation activities.

B-3 HYDROLOGY

Surface and groundwater conditions in the Green Valley Service Area are described in this section.

B-3.1 SURFACE WATER

B-3.1.1 Santa Cruz River

The Santa Cruz River rises in Southern Arizona, flows southward, makes a loop through Sonora, Mexico and re-enters Arizona near Nogales. It winds its way northward and passes through Green Valley and Tucson.

The Santa Cruz River flows through the Green Valley Service Area. The meandering riverbed consists of silts and sands and is highly susceptible to erosion. The river channel is 15-20 feet deep and generally unimproved banks with sparse tree and brush growth.

B-3.1.2 100 Year Flood Discharges

The 100-year discharge for the Santa Cruz River is approximately 25,000 cfs according to FIA and U.S. Army Corps of Engineers' data. FIA Maps show that the 100-year flood is generally contained within the banks of the Santa Cruz River. Floodwaters from a 100 year storm in the Santa Cruz River do not reach the Preferred Substation Site. The back water effect of the Santa Cruz effects the discharge points of the braided wash areas on the western slope of the Santa Rita Mountains to the east of the Green Valley Substation Site. The hydrology report prepared by RCS indicates that there will be sheet flows adjacent to the site at a depth of less than 12" and at velocities of less than 4 feet per second. The site development will not increase the water surface elevation beyond 0.1 foot, which is within Pima County Department of Transportation and Flood Control regulations. The hydrology report has been accepted and approved. A copy is on file for review at the Pima County Department of Transportation and Flood Control.

Based upon estimates from the Pima County Flood Control District and as verified by the hydrology report, the preferred Green Valley Substation Site lies outside the 100 year floodplain of the Santa Cruz River. Applicant will stabilize the north and east side of the pad and use fill material to protect the substation site from the potential of erosion based on the sheet flow characteristics in accordance with the current standards adopted Pima County Department of Transportation and Flood Control and the attached Flood Plain Permit approval letter dated Nov 29, 1994.

B-3.2 GROUNDWATER

The high angle fractures and jointing of the rocky peaks combined with the unconsolidated sedimentary deposits filling the valleys provide an extensive and relatively well connected subsurface hydrologic system. Large underground water reservoirs were created in the sediment-filled basins that provide extensive groundwater resources for the area. These geologic formations in the Tucson Basin comprise a ground water reservoir which contains a large volume of water in storage. It is this stored water that has historically met and will continue to meet the demands imposed by the various water using activities. In the proposed project area, replenishment from the surface and sub-surface flows augment the available groundwater stored in the underlying aquifer system.

B-3.2.1 Water Quality

The chemical quality of ground water underlying the area south and west of the sewage treatment plant and substation site in the service area is generally suitable for most purposes including domestic and related uses.

B-3.2.2 Availability of Supply

The water supply for a small portion of the Green Valley Service Area is provided in part by extraction of groundwater from the aquifer system underlying the Green Valley Service Area. The Farmer's Investment provides water to a majority of the Service Area.

B-3.2.3 Environmental Effects of Proposed Facility on Ground Water

During construction of the proposed 138 kV transmission line and substation three main potential impacts to the local water system could occur: (1) degradation of the quality of the local water bodies by runoff from the construction site, (2) impacts on the local water users originating from the water needs for the construction of the transmission line and substation facilities and the construction crew and (3) impacts on the water availability in the local community resulting from the water used by the construction force, their families and associated population increases.

Considering the low rainfall rates in the service area, the siltation and water quality degradation in the Santa Cruz River and bank waters of Sawmill Canyon caused by construction activities related to the project is expected to be minimal. It is expected that the work used in the construction of the proposed 138 kV transmission line and substation facilities will be supplied by the existing Tucson labor pool. No additional workers will be needed to operate the proposed Green Valley Substation. Construction and subsequent operation of the proposed 138 kV transmission line and substation will not increase population in the Green Valley Service Area, hence, will not have an adverse effect upon groundwater supplies. No irrigation is planned to be installed for landscaping until the water source is developed for land developed within the immediate area. The landscape concept is based on xeric vegetation re-introduction and as such the consumption of water will be minimal for a 5 year establishment period.

No adverse effects are anticipated concerning surface or underground water supplies during construction or after the proposed project is completed and the system is energized.

B-4 VEGETATION AND WILDLIFE

The studies were conducted by Dr. Charles H. Lowe during the summer months of 1994. The biotic inventory was accomplished through a review of the most recent regional ecological literature and agency listings coupled with on-site field examination of each major alternative segment.

The project study area is as shown on the accompanying illustrations and is generally bounded by Pima Mine Road on the north, the Santa Rita Experimental Range on the east, a line 2 miles north of the Pima County Line on the south and the Cyprus Sierrita Mine on the west, generally know as Green Valley.

B-4.1 VEGETATION

Much of the study area is within the urbanized and agricultural areas of the valley. The occurrence of natural, native Sonoran Desert vegetation is limited to areas immediately south and west of the urban core with several scattered areas along the eastern fringes of the study area. Otherwise, native plant / animal communities occur only as small, fragmented islands scattered throughout the developed lands.

Native plant communities present are dominated by either creosotebush / paloverde associations or riparian associations, predominately mesquite bosque.

B-4.1.1 Environmental Effect of the Proposed Facilities due to Vegetation

The vegetation and habitats encountered along the preferred route and substation development would not be adversely effected by construction activities or the physical siting of the proposed facilities. During the clearance process neither threatened or endangered species were found and unique habitats generally related to the secondary and tertiary wash systems will be avoided.

B-4.2 WILDLIFE

The vast majority of pre-settlement native Sonoran Desert wildlife populations have been translocated as a result of urban and agricultural pressures. Native wildlife species can still be found where native plant communities persist, and a few native species are able to survive the transition from natural habitats to agricultural and urban environs. The current list of the threatened or endangered species for both the federal and state agencies refined to the potential species for this region was reviewed and used a guide during the field investigations.

When likely habitats for any of the threatened or endangered species were encountered a more intense investigation was performed to determine, if by actual sighting or by associative evidence, the presence of these species. None were found within the study area. No fish were found.

B-4.2.1 Environmental Effects of the Proposed Facilities on Habitats and Wildlife

No potentially significant impacts to biological resources are expected as a result of the construction or operation of this project. Minor impacts could occur where disturbed, natural areas of native habitat are modified in the construction process. The impacts to biotic resources will be reduced to almost nothing by using the existing rights of way, existing roadways and by avoiding construction within the riparian community and by minimizing the removal of the trees and shrubs where they occur.

B-5 AESTHETIC & VISUAL ANALYSIS

At the onset of the planning studies the scenic characteristics of the area were assessed and categorized. Beyond the general landscape characteristics of form color scale texture etc. the aspect of the contextural viewshed was defined. The most significant impacts a transmission line can have is when it is profiled against the sky and when the texture definition becomes so soft that a crisp structure generates a high level of textural contrast. The field or ground truthing phase of the visual analysis identified characteristics that were key factors in the siting recommendations.

The residents of the Green Valley communities value their views to the east of the transitional foothills on up to the crests of the Santa Rita Mountains. The views to the west have been impacted so greatly by mining activities that there would be no perceived visual impact due to an installation of a transmission line in this quadrant. Based on these attitudes and the field studies of the viewsheds it was determined that the corridors that where considered low along the Santa Cruz River and positioned so that the structures where viewed against a backdrop of the pecan orchards or screened by them was preferential to most other visual siting characteristics. No long sight lines or textural contrasts and positioned out of the dominate views.

B-6 ARCHEOLOGICAL & HISTORIC SITES

At the request of Tucson Electric Power Company, Professional Archeology Services and Technology (PAST) surveyed the corridor and substation site. The study identified a range of cultural materials which were encountered. The following is a summary of that study which is followed by a mitigation plan proposed and the effects of the proposed facilities on the archaeologic and historic sites.

Archives at the Arizona State Museum have 2 prehistoric or historic sites or features recorded within the boundaries of the corridor and substation site. However, after an intensive on-foot survey of the property, ten areas were identified as containing surface indications of significant archaeological materials. All of the sites identified would qualify under criteria "d" for inclusion into the National Register.

The two recorded sites extend into the boundaries of the substation property. One is an historic guayle plantation established by Continental Rubber Co. in 1914. There is a foundation present along with historic artifacts. Prehistoric sherds and lithics were also found, but the area has been highly disturbed by farming and previous construction. It is recommended that further investigations be conducted on this site.

The eight unrecorded sites along the corridor contain evidence of possible prehistoric habitation. Two of the sites have low likelihood of buried cultural materials, while five have very high likelihood and the final one high likelihood. The conclusion of the survey is that the placement of the power poles can be sited so as to not adversely impact the cultural resources and archaeological materials found within the boundaries of the corridor.

The mitigation will occur in the design and construction phases. PAST recommends that during the design phase, the poles or other structures can be located in a manner that would not adversely impact the cultural resources. This would be followed by field monitoring during the course of construction when work is in the vicinity of the know sites. The historic sites on the proposed Green Valley substation site are currently being investigated to determine the extent and contextural characteristics of the artifacts.

B-7 AMBIENT NOISE & RADIO INTERFERENCE

B-7.1 AMBIENT NOISE LEVELS

A study of ambient noise has been conducted along the perimeter of the proposed Green Valley Substation Site. Existing average ambient noise ranged to a maximum level of 52db on the west side of the site in the morning and evening hours. These ambient noise level readings do not include specific noise generators such as aircraft, trains, barking dogs or loud automobiles. Because of adjacent development activities and future increases in traffic, ambient noise levels may increase in the foreseeable future. Therefore, sound readings for ambient noise will be taken again prior to construction of the substation to determine noise levels at the property line at the time and to insure the performance of substation equipment.

B-7.2 CONSTRUCTION NOISE

The proposed Green Valley 138 kV transmission line and substation project will require a variety in type and size of construction equipment. Construction noise will vary with the particular phase of construction, the mix of equipment used for each phase and the duty cycle of the equipment. Phases of construction include site preparation, excavation, foundation placement, structure erection and cleanup.

Noise from construction equipment will generally not be continuous. Normal construction hours will be between 8:00 a.m. and 5:00 p.m. Each machine will not operate at full load for an entire construction day; in fact, some will operate at full loads for only short periods. Because of the noise from adjacent activities, increases in periodic noise due to construction of the proposed 138 kV transmission line and substation will be minimal.

B-7.3 NOISE FROM SUBSTATION AND TRANSMISSION LINE FACILITIES

There are three sources of noise produced from electrical substation and transmission line facilities: (1) transformers and (2) circuit breakers produce noise in the substation, and (3) corona discharge can occur on high voltage electrical conductors under high humidity conditions. Noise from circuit breakers and corona discharge are operatic and of little significance. Noise from transformers is of low frequency and continuous. Noise emissions from substation equipment at the perimeter of the substation site will be below the Department of Housing and Urban Development (HUD) standard of 55 db for residential areas, which is at or below the current ambient noise levels as stated above.

B-7.3.1 Environmental Effects of Proposed Facilities on Noise Emissions

Noise emissions from the Green Valley Substation site will not exceed a level of 55 dba on the "A" scale at the property line. To meet this level of performance, Applicant may use either individually or in combination the following mitigation measures: distance, loss evaluated transformers, landscaping and sound abatement structures. As a result of these mitigation efforts, no significant effects resulting from audible noise emissions will result from the construction and operation of the 138 kV transmission line and substation facilities.

B-7.4 RADIO AND TV INTERFERENCE (RI & TVI)

The prevention of the interference to communication signals is one criterion incorporated into the design of any high voltage transmission line. Radio interference (RI) levels measured by the Applicant engineers on similar transmission lines indicate an average RI level of approximately + 23.5 db/u/m or 15 microvolts per meter (field intensity) at a lateral distance of 200 feet from the outer conductor of the transmission line can be anticipated. Standards on acceptable levels have not as yet been finalized; however, the above level is generally the goal used by other utilities.

Such statements of average radiated RI levels can only be considered valid under specific conditions of measurement, with instruments of standard characteristics. The + 23.5 db/u/m average RI level of 200 feet applies to measurements made at a frequency of one megahertz, during typical dry weather conditions and during periods of daylight hours. Seasonal variations can vary the RI levels approximately 6 db or more and the difference in RI levels between fair and foul weather will average 17 db, hence the + 23.5 db/u/m typical level can only be described as an "average." RI levels usually diminish with increasing radio frequencies at frequencies above 50 megahertz, the radiated noise field intensity is generally at much lower levels.

At radio frequencies generally received by the general public, i.e., the standard AM broadcast board, and the FM and TV channels, the Federal Communication Commission requires of each broadcasting station to adhere to certain levels of radio field strength to insure that the radio signals will be of sufficient strength to provide good radio listening or TV picture quality within the primary area of coverage. The levels of these radio and TV signals are very high and the quality of reception is dependent upon the signal to noise ratio at the receiver, the signal being transmitted from the station, and the noise from any source (such as electrical machinery, appliances, motors, transmission lines and cosmic noise from space.) In evaluating the effect of noise on the quality of received signals, the following ratios of signal to noise levels are considered adequate for good noise free reception.

Standard Broadcast Stations	20/1	
Black and white TV		100/1
Color TV		150/1

B-7.4.1 Environmental Effect of Proposed Facilities on RI and TVI

Based on the Applicant's past experience, RI and TVI levels which will emanate from the proposed 138 kV transmission line and substation facilities are not expected to cause any significant interference to signals.

B-7.5 ELECTROMAGNETIC FIELDS (EMF)

Transmission lines are known to generate electromagnetic fields (EMF). However, it is generally accepted that the wiring configurations of common household electrical appliances (toasters, microwave ovens, televisions, electric blankets, radios, etc.) pose greater risks of EMF exposure than properly constructed transmission lines (Douglas 1984: Wertheimer and Leeper 1982).

The EMF exposure at the right-of-way from the proposed 138 kV line is less than that from the existing 46 kV line. The proposed line uses higher towers, and wire configuration that minimize EMF exposure.

EXHIBIT C

UNIQUE AREAS OF BIOLOGICAL WEALTH, HABITATS FOR RARE AND ENDANGERED SPECIES

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT C

UNIQUE AREAS OF BIOLOGICAL WEALTH, HABITATS FOR RARE AND ENDANGERED SPECIES

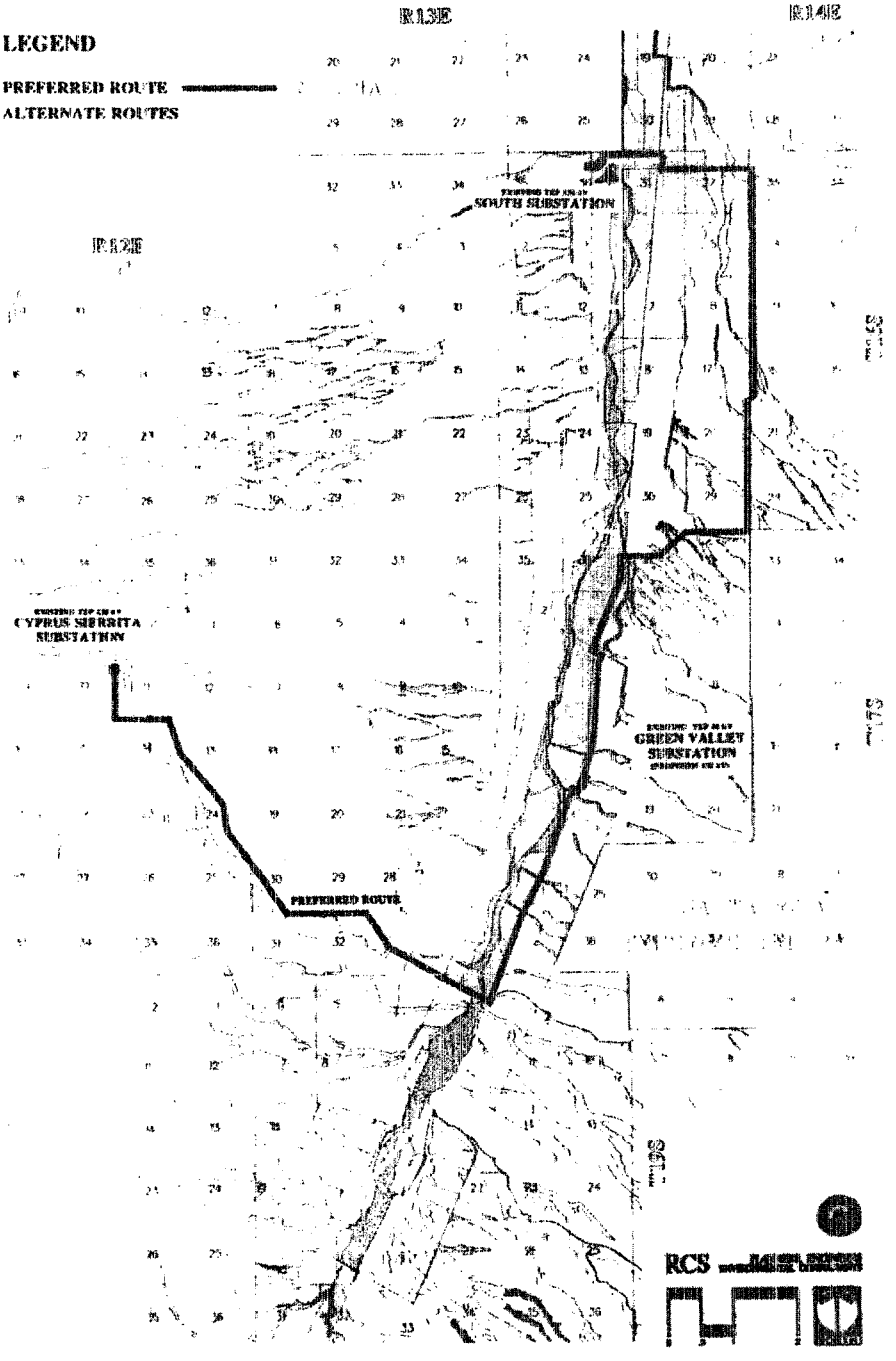
As stated in ARS R14-3-219:

"Describe any areas in the vicinity of the proposed site or route which are unique because of biological wealth or because they are habitats for rare and endangered species. Describe the biological wealth or species involved and state the effects, if any, the proposed facilities will have thereon."

INTRODUCTION

Biotic resource inventory studies were conducted along the alternative segments of the proposed Green Valley 138 kV transmission line for the purpose of identifying natural plant and animal resources present. The primary emphasis of the study was to ascertain the probability of occurrence of populations of threatened or endangered, proposed threatened or endangered, and other sensitive lifeforms.

See section B-4 for this information.



138kV Green Valley Substation and Transmission Line	Sensitive Habitats Major Water Courses	Exhibit C-1

EXHIBIT D

LIST OF FISH, WILDLIFE, PLANT LIFE AND OTHERFORMS OF LIFE IN THE STUDY AREA & EFFECTS OF PROPOSAL

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT D

LIST OF FISH, WILDLIFE, PLANT LIFE AND OTHER FORMS OF LIFE IN THE STUDY AREA & EFFECTS OF PROPOSAL

As stated in ARS R14-3-219:

"List fish, wildlife, plant life and associated forms of life in the vicinity of the proposed site or route and describe the effects, if any, the proposed facilities will have thereon."

This information is contained in Section B-4.

EXHIBIT E

SCENIC, HISTORIC, AND ARCHEOLOGICAL SITES

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT E

SCENIC, HISTORIC, AND ARCHEOLOGICAL SITES

As stated in ARS R14-3-219:

"Describe any existing scenic areas, historic sites and structures or archaeological sites in the vicinity of the proposed facilities and state the effects, if any, the proposed facilities will have thereon."

A search of available reports and other local references respecting the study area revealed no officially designated scenic areas in the vicinity. A review of the current listing of the National Register of Historic Places indicates that no historic places are located in the study area.

A discussion of the scenic and visual characteristics of the study area and the relationship to the preferred route is included in Exhibit B-5.

Information on the historic and archeological sites within the study area can be found in Exhibit B-6.

P A S T
Professional Archaeological
Services and Technologies

4000 • 1400 • FEC

May 24, 1994

Mr. Daniel Elder
RCS
8765 E. Bear Place
Tucson, AZ 85749

RE: Preliminary report for Green Valley T.E.P. Lines
Archaeological Exploration
PAST Job No. 94507

Dear Mr. Elder:

Personnel from P.A.S.T. conducted a 14 personday exploration of the Green Valley T.E.P. Lines proposed alignments on May 8 to 16, 1994 located in Pima County near Green Valley. This exploration consisted of an intensive on-foot coverage of the property by our staff in order to identify and locate any cultural resources, historic or prehistoric, within the alignment boundaries. Field personnel (J. Jones, C. Howard & A. Lenhart) were spaced approximately 20 meters apart and crossed the subject property in a series of contiguous corridors paralleling the alignments. General conditions were excellent for conducting the fieldwork. Ground visibility was minimally effected by the presence of trees, shrubs, semi-shrubs, succulents and grasses. The aboriginal land-form was disturbed to varying degrees by historic alterations to the ground surface. Along with an occasional isolated artifact, there were ten areas that contained surface indications of significant archaeological materials on the property. However, archives at the Arizona State Museum showed there are 2 recorded sites or features on the subject property.

Given the discovery of the artifacts noted above, it appears that areas within the alignments contain archaeological resources which would qualify under criteria "d" for inclusion into the National Register. Eight of these areas are not documented at the Arizona State Museum and should be formally recorded as archaeological sites. In addition, I recommend that further investigations be conducted to verify the nature and extent of significant archaeological resources if they can not be avoided during construction activities. Ground disturbing activities on the property should not commence without consultation with the agency archaeologist(s) and the S.H.P.O., as appropriate. There remains the possibility that development related activities could reveal the presence of heretofore unknown cultural resources. If such materials are discovered construction activities should stop. Consultation should be initiated with the cognizant agency archaeologist, and if applicable under ARS 41-844 the Arizona State Museum, to assess the significance of any artifacts or features unearthed. Under State law (ARS 41-865), if human

Consulting
Archaeologists

P.A.S.T.
5036 E. Golder Ranch Road
Tucson, Arizona
85737-9503 U.S.A

Telephone & Fax
602 825-3536

skeletal remains or funerary objects are discovered the Arizona State Museum should be contacted immediately.

In summary, the construction and placement of the proposed power line poles are not prohibited by the presence of the sites that were located during the field work. It appears, by taking appropriate precautions, the poles can be sited in a manner that would not adversely impact the cultural resources located within the proposed alignments. In those cases where pole placement will fall within the boundaries of an archaeological site, limited testing and monitoring can be undertaken that would assure that no significant loss of archaeological materials will occur. An inventory of the archaeological sites transected by the alignment and in the immediate vicinity is attached.

Thank you for the opportunity to work with you on this project. If I may be of any further assistance please contact me.

Sincerely,

David V. M. Stephen, Archaeologist State Antiquities Permit No. 94-08

P. A. S. T.
Professional Archaeological Services & Technologies
9036 Golder Ranch Road, Tucson, AZ 85737 602.825.3536

EXHIBIT F

AVAILABILITY OF PROJECT PROPERTIES FOR RECREATIONAL PURPOSES

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT F

AVAILABILITY OF PROJECT PROPERTIES FOR RECREATIONAL PURPOSES

As stated in ARS R14-3-219:

"State the extent, if any, the proposed site or route will be available to the public for recreational purposes, consistent with safety considerations and regulations and attach any plans the applicant may have concerning the development of the recreational aspects of the proposed site or route."

The applicant has no plans to utilize any of the proposed transmission route easements or the substation site for public recreation. If plans are developed, Tucson Electric Power Company is agreeable to any such multiple use which is consistent with the safe operation and maintenance of the transmission lines and substation and in accordance with applicable safety regulations.

EXHIBIT G

DESCRIPTION OF PROPOSED FACILITIES

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT G

DESCRIPTION OF PROPOSED FACILITIES

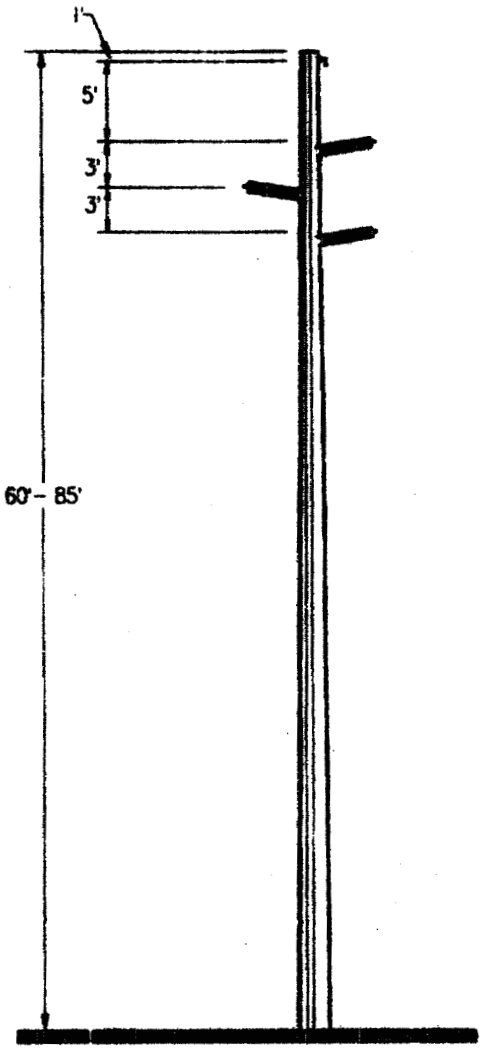
As stated in ARS R14-3-219:

"Attach any artist's or architect's conception of the proposed plant or transmission line structures and switchyards, which applicant believes may be informative to the Committee."

CONTENTS

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



ONE - CIRCUIT
138kV TANGENT POLE

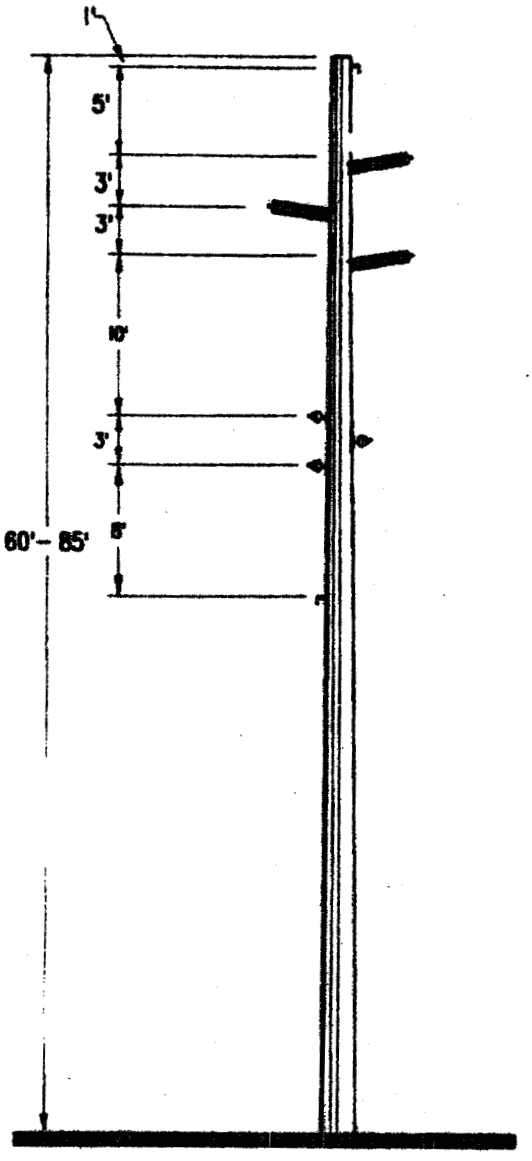
138kV TRANSMISSION LINE SYSTEM

G - 1.1

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



ONE CIRCUIT 138kV POLE
W/ 14 kV DISTRIBUTION SYSTEM

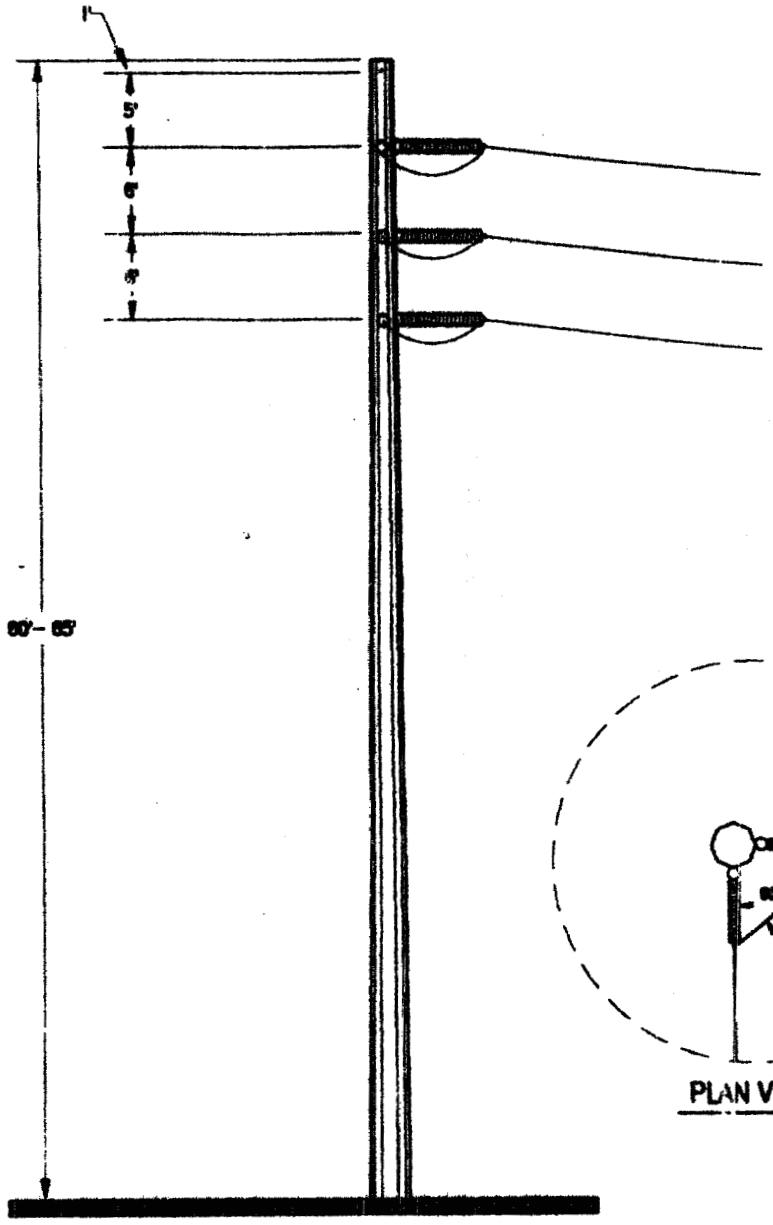
138kV TRANSMISSION LINE SYSTEM

G – 1.2

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



PLAN VIEW

ONE CIRCUIT 138kV TURNING STRUCTURE OR DEADEND POLE

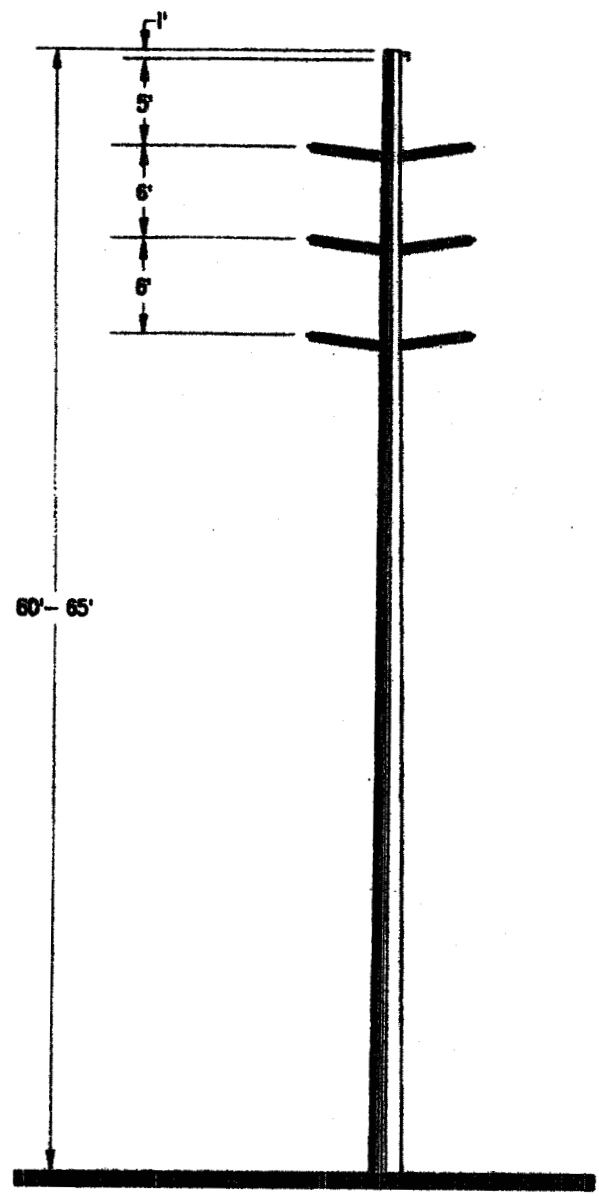
138kV TRANSMISSION LINE SYSTEM

G – 1.3

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



TWO CIRCUIT 138kV POLE

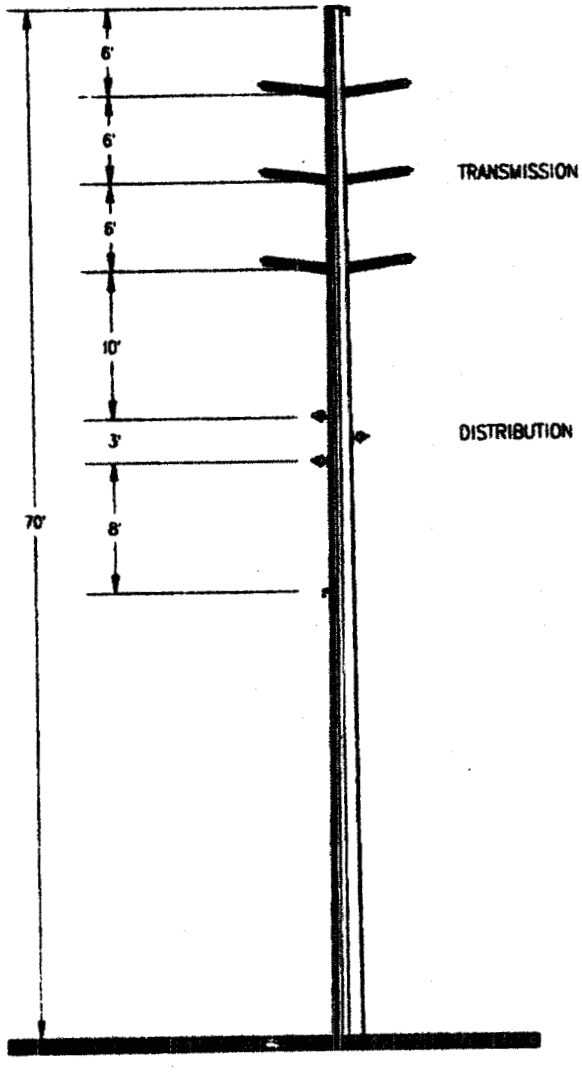
138kV TRANSMISSION LINE SYSTEM

G – 1.4

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



TWO CIRCUIT 138kV / 46kV POLE W/ 14kV DISTRIBUTION SYSTEM

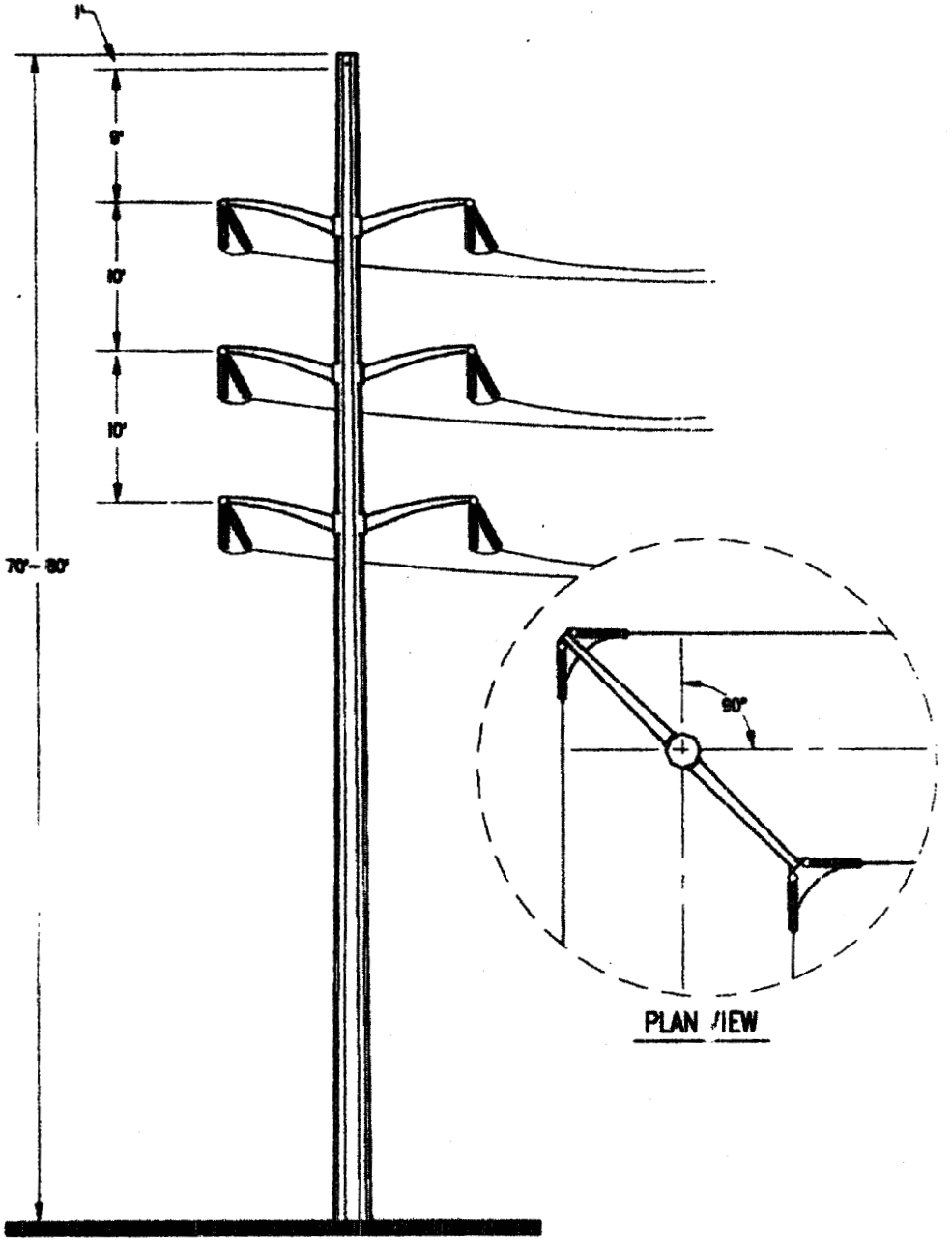
138kV TRANSMISSION LINE SYSTEM

G – 1.5

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



TWO CIRCUIT 138kV TURNING OR DEADEND POLE

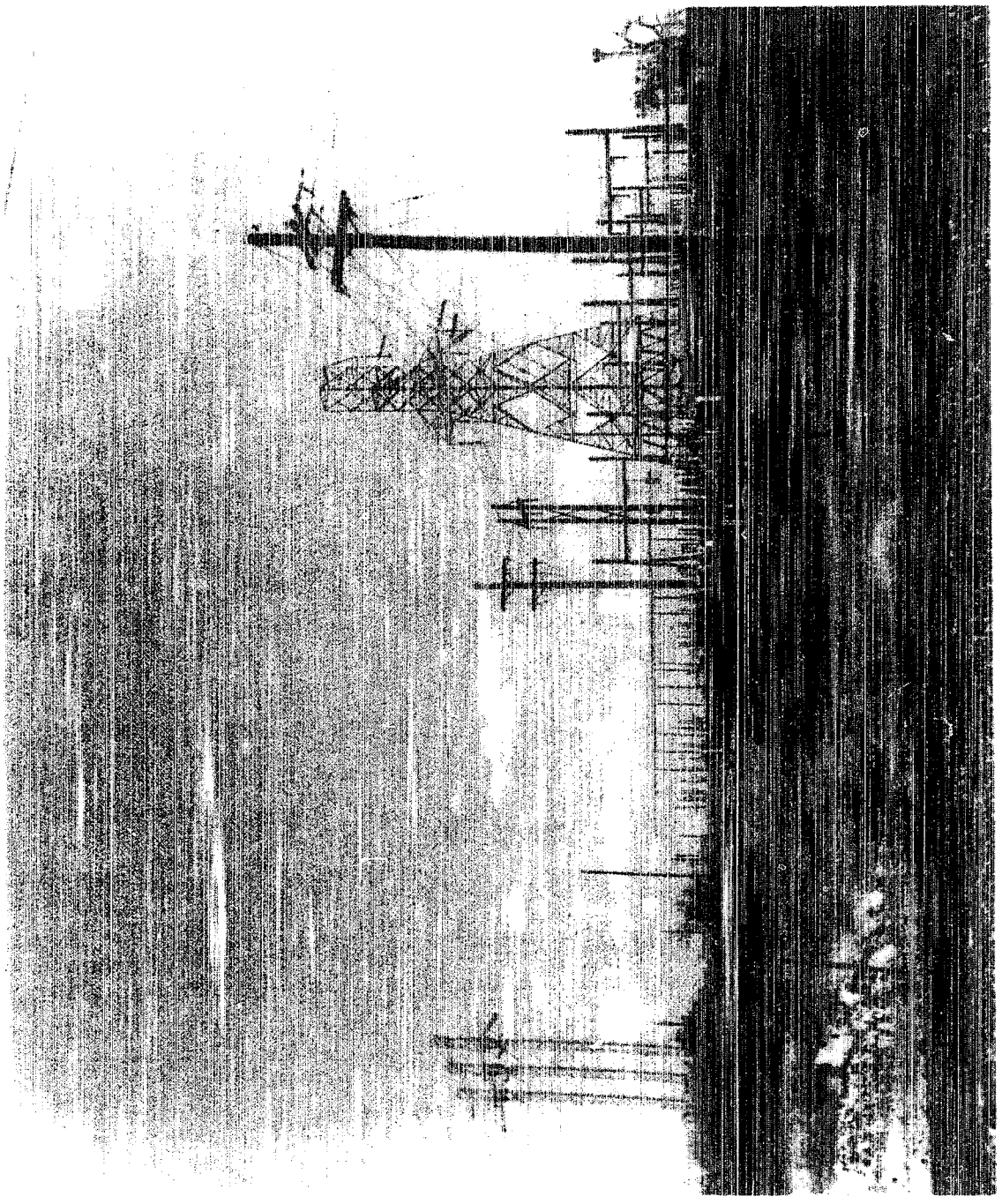
138kV TRANSMISSION LINE SYSTEM

G – 1.6

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



SOUTH SUBSTATION

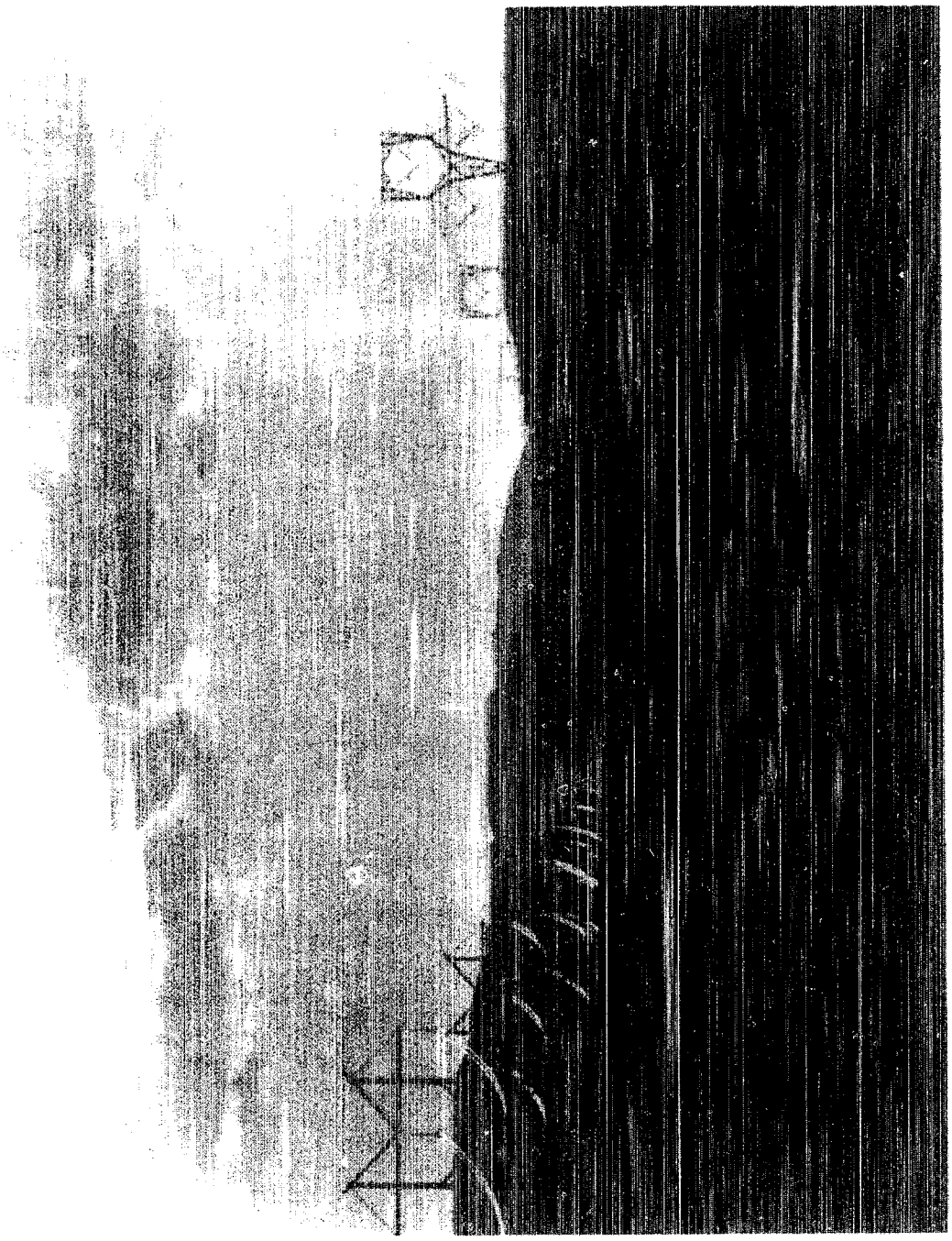
G – 2.1

138kV TRANSMISSION LINE SYSTEM

EXHIBIT NO

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



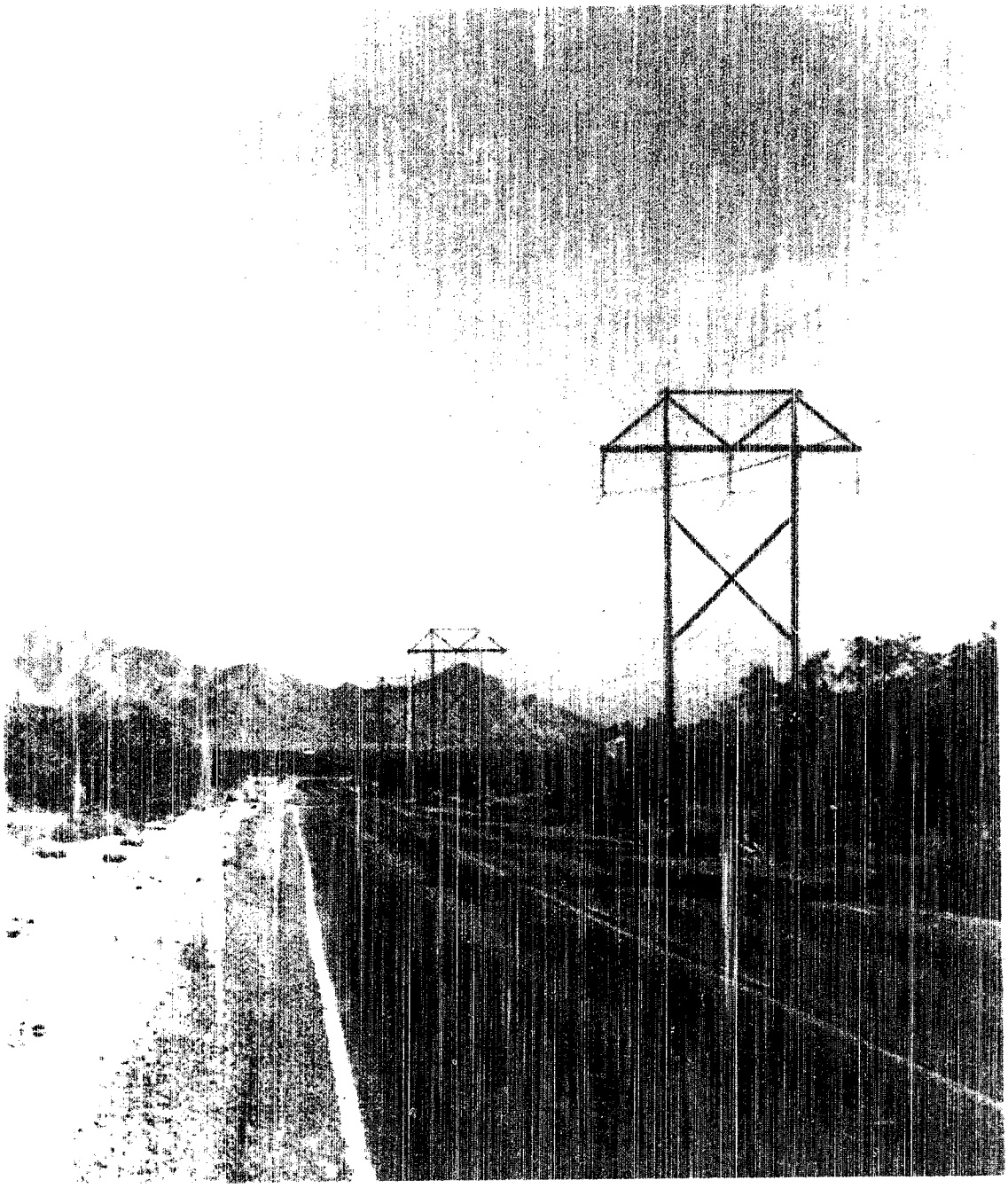
PREFERRED ALIGNMENT
EAST OF SOUTH SUBSTATION
138kV TRANSMISSION LINE SYSTEM

G – 2.2

EXHIBIT NO

GREEN VALLEY SUBSTATION & TRANSMISSION LINE

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



PREFERRED ALIGNMENT SOUTH OF PIMA MINE ROAD ON COUNTRY CLUB RD.

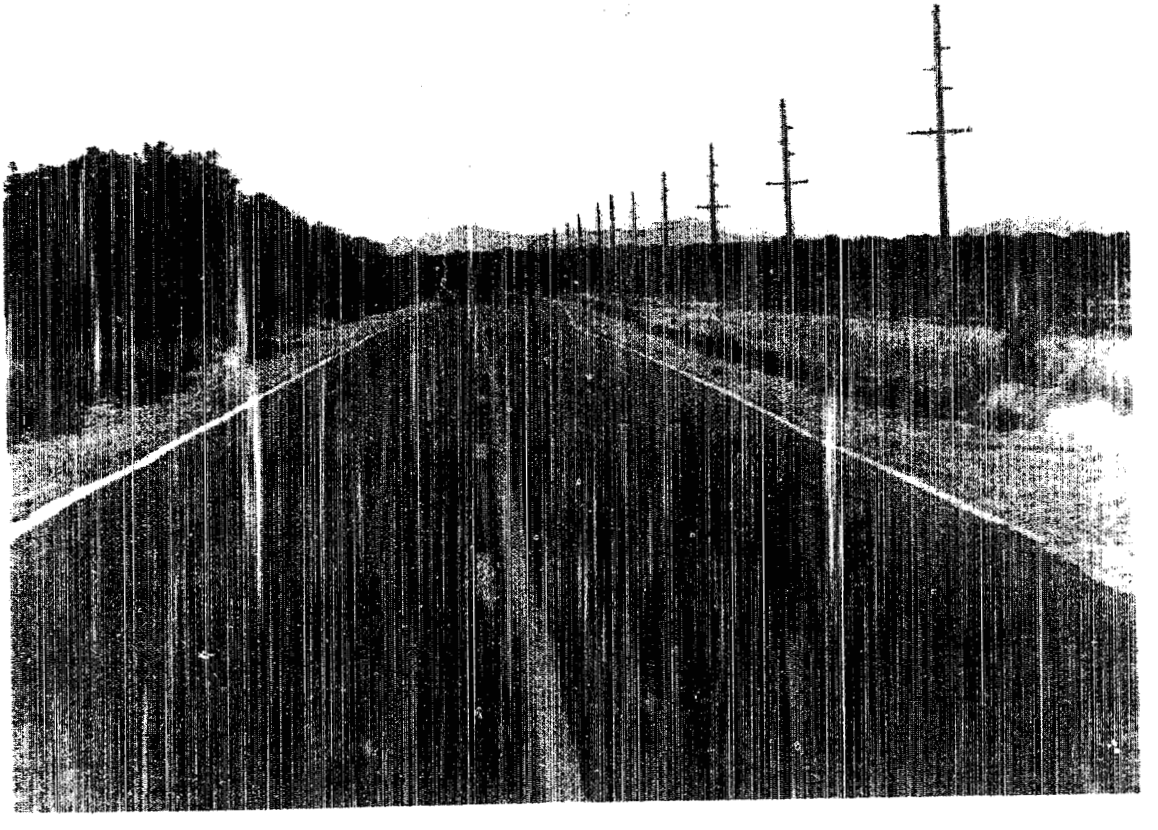
G – 2.3

138kV TRANSMISSION LINE SYSTEM

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINE

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA
GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



OLD NOGALES HIGHWAY SOUTH
TOWARDS GREEN VALLEY SUBSTATION

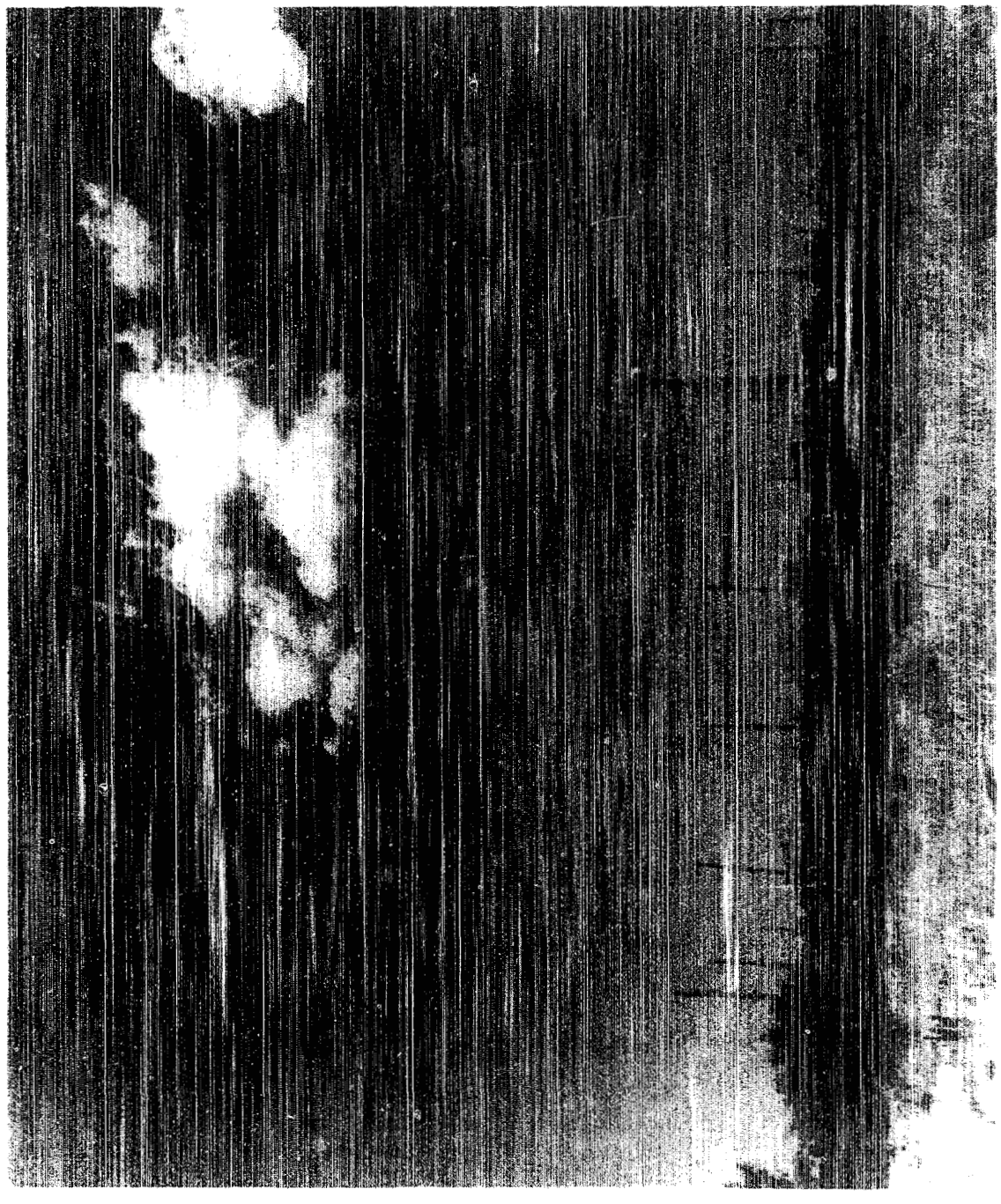
138kV TRANSMISSION LINE SYSTEM

G – 2.4

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



GREEN VALLEY SUBSTATION

138kV TRANSMISSION LINE SYSTEM

G – 2.5

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY

PREFERRED ALIGNMENT SOUTH OF GREEN VALLEY SUBSTATION

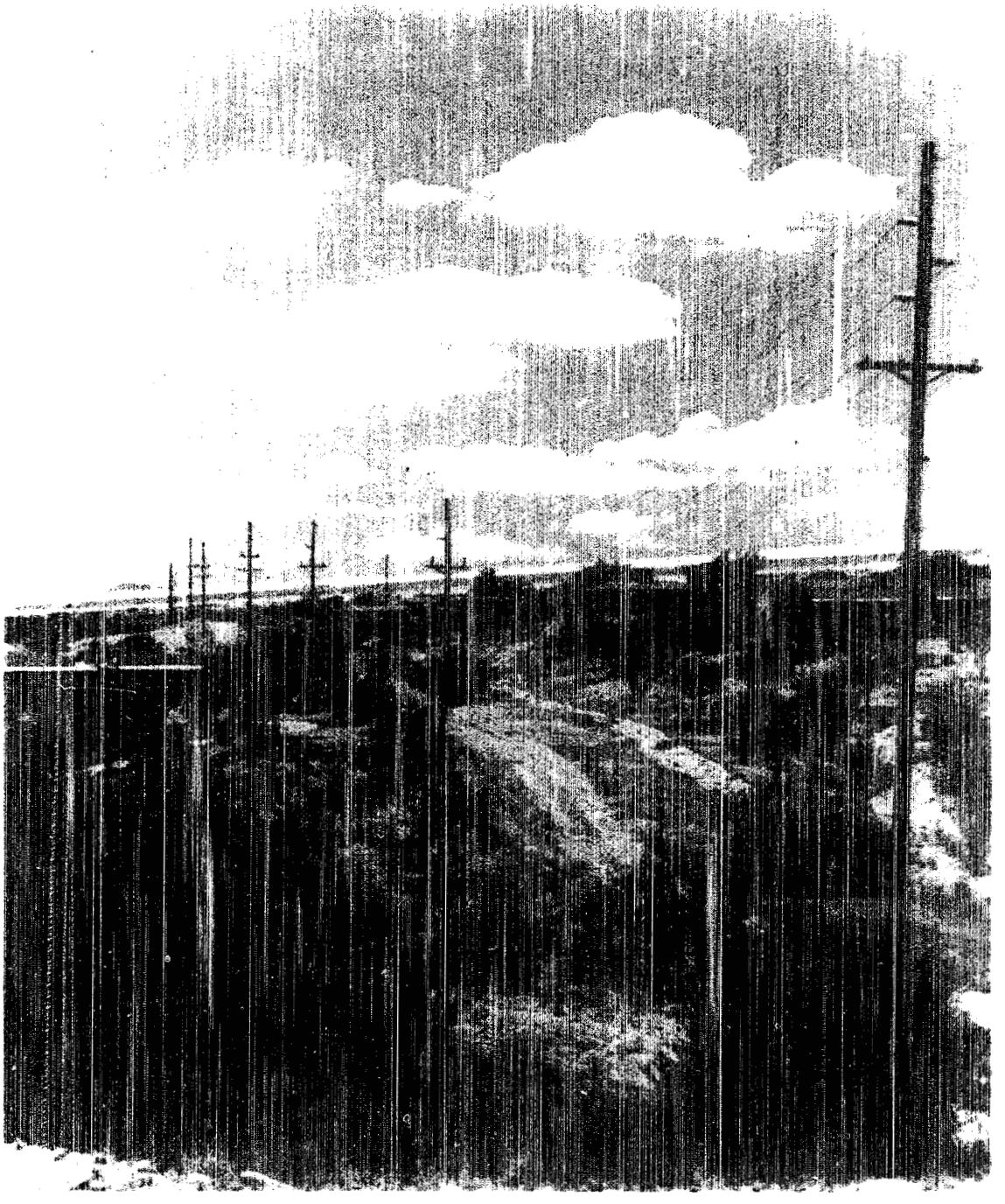
138kV TRANSMISSION LINE SYSTEM

G – 2.6

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINE

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA
GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY



URBAN ALIGNMENT BETWEEN I-19 &
DEL SOL, GREEN VALLEY

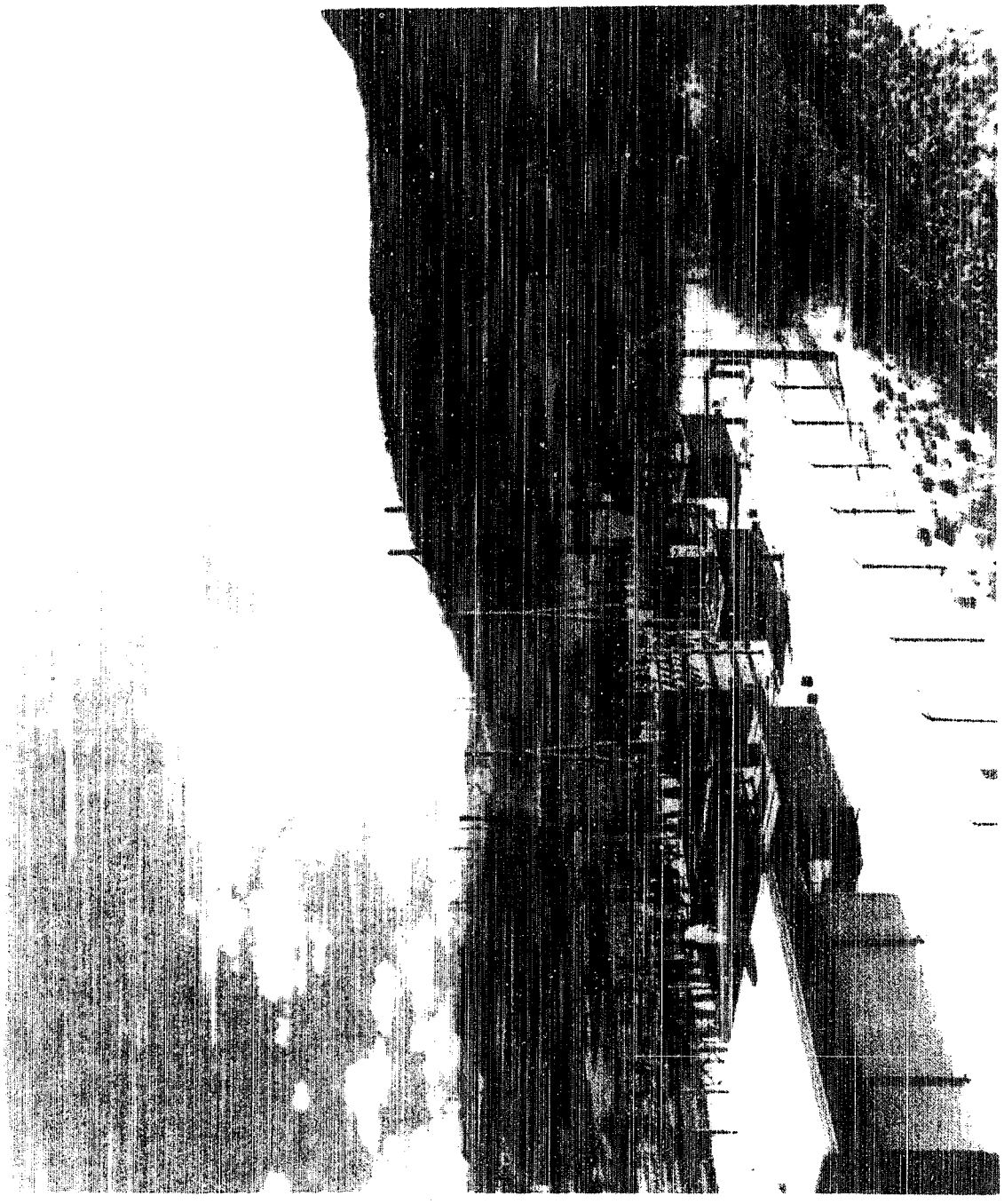
138kV TRANSMISSION LINE SYSTEM

G – 2.7

EXHIBIT NO.

GREEN VALLEY SUBSTATION & TRANSMISSION LINES

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY

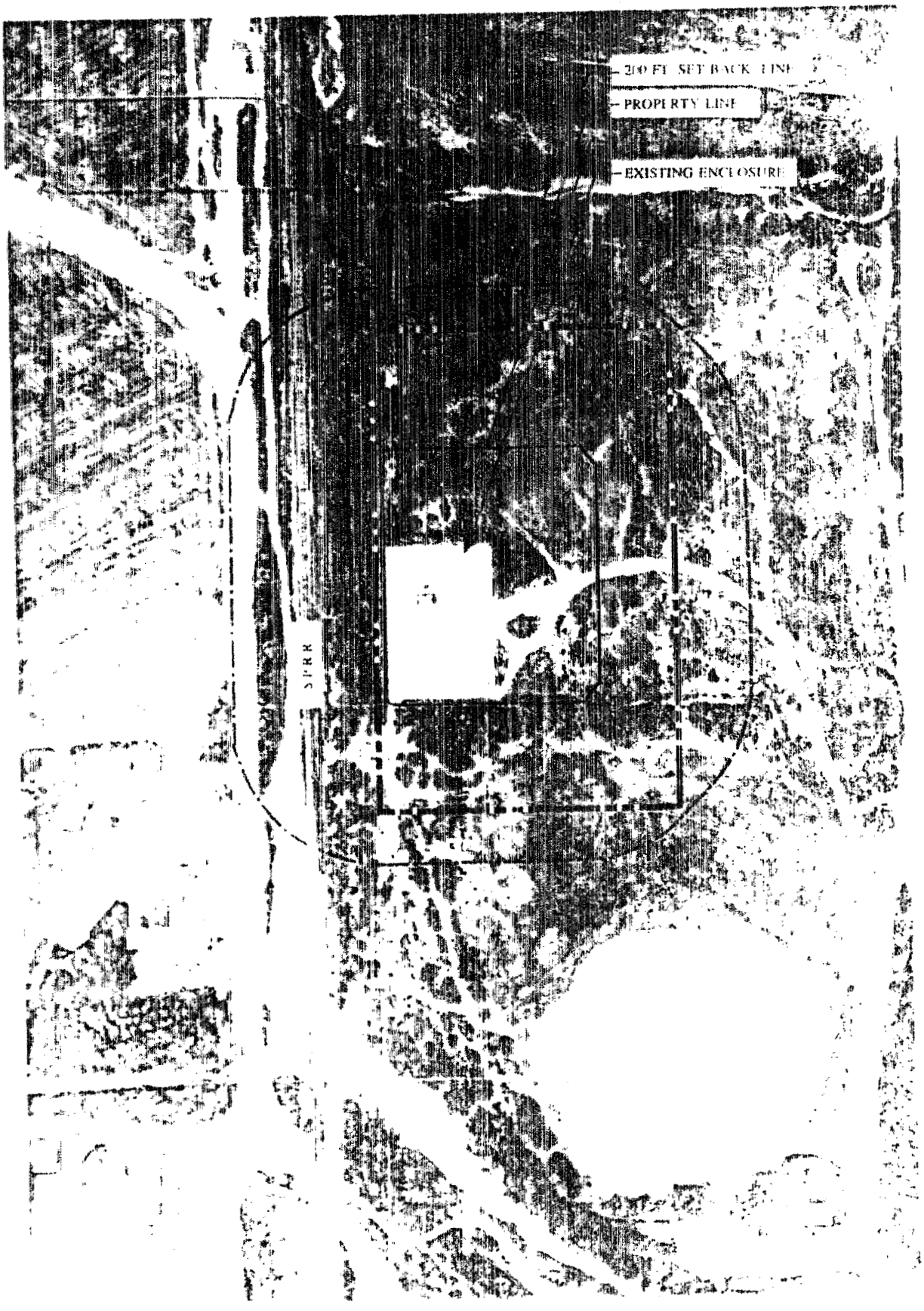


CYPRUS SIERRITA 138 kV SUBSTATION

138kV TRANSMISSION LINE SYSTEM

G – 2.8

EXHIBIT NO.



PROPOSED GREEN VALLEY SUBSTATION AERIAL SITE PLAN G – 3.1

[illegible] TO CYPRESS SIERRITA VIA

[illegible] SOUTHERN CALIFORNIA EDISON ELECTRIC POWER COMPANY

EXHIBIT NO.

PROPOSED GREEN VALLEY SUBSTATION SITE PLAN

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA
GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY

G – 3.2

EXHIBIT NO

PROPOSED REVEGETATION AND GRADING CONCEPT PLAN

138kV TRANSMISSION LINE FROM SOUTH TO CYPRUS SIERRITA VIA
GREEN VALLEY SUBSTATION - TUCSON ELECTRIC POWER COMPANY

G - 3.3
EXHIBIT NO

EXHIBIT H

DEVELOPMENT PLANS FOR THE STUDY AREA

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT H

DEVELOPMENT PLANS FOR THE STUDY AREA

As stated in ARS R14-3-219:

"To the extent applicant is able to determine, state the existing plans of the State, local government and private entities for other developments at or in the vicinity of the proposed site or route."

Exhibit 4.2 entitled "Comprehensive Land Use Plan" is the a copy of the plan adopted by the Pima County Board of Supervisors, October 1992 for the study area. This plan replaced all adopted area plans within Pima County. DRD Development has submitted and received approval for a "cluster concept development plan" for the property immediately adjacent to the Green Valley Substation site on the north, east and south boundaries. U.S. Fiduciary Corporation has submitted a plan amendment request to Pima County for a parcel along the Phase II portion of the preferred route south of Whitehouse Canyon Road.

EXHIBIT I

NOISE EMISSION LEVELS

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT I

NOISE EMISSION LEVELS

As stated in ARS R14-3-219:

"Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities."

This information is contained in Exhibit B-7.

EXHIBIT J

OTHER CONSIDERATIONS

Tucson Electric Power Company
South Substation to Cyprus Sierrita Substation through Green Valley Substation

EXHIBIT J

OTHER CONSIDERATIONS

CONTENTS

green valley news and sun

50¢

"YOUR COMMUNITY NEWSPAPER"

Vol. 51 No. 38 Santa Cruz Valley, Arizona Wednesday, November 9, 1994 24 Pages

TALK OF THE TOWN
Canvas Backers' annual sale
7B

KLEIN'S MENAGERIE
Pot-bellied pigs, a 'miracle' calf and more
View, 1B

TEP reveals plans for GV expansion

By Robert Will
Green Valley News

Plans to cope with Green Valley's growing demand for electricity were unveiled last week by officials of Tucson Electric Power Co.

Duane Bock, manager of TEP's environmental systems, told the Green Valley Community Coordinating Council that establishment of larger capacity transmission lines east of the Santa Cruz River is expected to enable improved service over a 25-square-mile area.

Until now, said Bock, TEP has operated through a series of 46,000-volt lines and smaller voltage feeder lines, but the firm restudied their plans when residents of an area in southern Green Valley raised objections to construction of a new substation there.

(please turn to page 8, sec. a)

TEP

(contd. from page 1, sec. a)

Their studies, he said, led to a solution which will involve installation of 138,000-volt lines east of the pecan groves, beginning next year.

The higher voltage lines, Bock said, will eliminate the need for additional 48,000-volt lines, he said, adding that existing lower voltage lines will be "phased out over time."

Feeder lines carrying up to 14,000 volts can be installed underground, he said in answer to a question, but the 138,000-volt lines cannot be installed in this manner and will require towers of 60 to 70 feet in height.

The higher voltage power lines will be obscured from view by Green Valley residents, he said, by the tall pecan trees in the FICO groves that parallel the east side of the Santa Cruz River.

The first phase of the new installation, to be completed by spring of 1996, will be 14.3 miles long, while the second phase, scheduled to be in operation by the year 2004, will be another 12.1 miles in length.

Environmental and other necessary studies, he said, will be conducted during the route selection process.

TEP seeks power substation expansion permit

By Garry Duffy
Green Valley News

A request by Tucson Electric Power Co. to expand its Continental power substation to carry 138,000 volts will be heard by the Pima County Board of Supervisors Tuesday.

The utility needs board approval of a permit to upgrade its existing power substation, located near White House Canyon Road and Continental Road, to exceed 115,000 volts for improved service for a 25-square-mile area.

Also, TEP is seeking variances for a required 200-foot setback and screening requirements.

The board meeting is to start at 9 a.m. in the first-floor courtroom in the Pima County Superior Courts Building, 110 W. Congress in Tucson.

TEP officials want to expand the Green Valley area power substation to handle future anticipated energy needs.

The existing substation is on a 6-acre RH (rural homestead) zoned parcel which is located about one-quarter mile north of White House Canyon Road and just east of Old Continental Road.

The staff of the Pima County Public Works-Development Services Department Planning Division has recommended approval of the request.

County building height limitations of 34 feet will apply to the site. TEP plans no new equipment to exceed 14 feet in height at the site.

The county has no jurisdiction over the height of transmission poles and lightning protection masts.

Company officials are planning a two-stage expansion project that in the first stage will see a 14.3-mile line of transmission poles from another TEP power substation east of Pima Mine Road to the Green Valley area substation.

The 60-foot to 85-foot transmission poles are planned to parallel Country Club Road south, veer east about three miles south of Sahuarita Road, and run south again near Old Nogales Highway to the existing Green Valley substation.

Company officials have said the transmission poles will be mostly hidden from view from Green Valley by pecan trees in orchards owned by Farmers Investment Co.

A FICO official yesterday said average heights for pecan trees at the grove are about 50 to 60 feet.

"In general, the rate is from 60 to 85 feet," TEP spokesman Jay Gonzales, said yesterday.

Most of the project is to run along existing TEP right-of-way.

The project's first phase is planned for completion in early spring 1996.

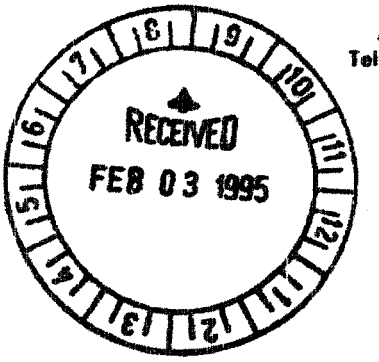
A second phase, to be completed in 2004, includes the erection of another 12.1 miles of transmission poles from the Green Valley area substation, south and east of the river, then cutting northwest to the Cyprus Sierrita Mine operation at Duval Mine Waterline Road.

Tucson Electric Power Company

220 West Sixth Street, Post Office Box 711
Tucson, Arizona 85702

Area Code 602
Telephone 571-4000

February 2, 1995



Hon. Paul Marsh, Chairman
Pima County Board of Supervisors
130 W. Congress Street
Tucson, Arizona 85701

Dear Mr. Marsh:

Re: Green Valley Power Substation Permit: Co18-94-2

Tucson Electric Power Company (TEP) has received a copy of the Staff Report regarding our application for a permit to expand the existing TEP electric substation in Green Valley. TEP appreciates the timely development of the staff report which recommends approval at the Board's February 7 hearing, and the following comments are offered in our acceptance of the report's conditions of approval.

1. TEP will submit a landscape plan prior to the time of construction of the adjoining Continental-White House Canyon Road, provided that water service has by that time become available in order to support landscape vegetation.

2. TEP has already commissioned an on-the-ground archaeological survey for the substation site. Any areas identified by the study for mitigation or follow-up measures will be addressed in a plan to be submitted to Pima County for review.

3. TEP will dedicate the requested north 75 feet of the subject property for roadway purposes upon request.

Again, TEP agrees with the conditions for approval as set forth in the staff report, and takes no exception to issuance of the permit subject to those three conditions. Please feel free to contact me directly at 745-7126 should you have any comments concerning this permit request.

Very truly yours,

H. Duane Bock

H. Duane Bock
Manager, Environmental Systems

cc: Mike Boyd, Dan Eckstrom, Ed Moore, Raul Grijalva, Chuck Huckleberry, David Petersen, Frank Behlau, James Mazzocco

DIAMOND MANAGEMENT, INC.
2200 East River Road, Suite 115
Tucson, Arizona 85718
602/577-0200

February 6, 1995

Mr. Jim Mazzacco
Planning & Zoning Services
201 N. Stone, 2nd Floor
Tucson, Arizona 85701

Via Fax: 623-5411

Re: Co18-94-2, TEP - CONTINENTAL-WHITE HOUSE CANYON ROAD

Dear Mr. Mazzacco:

Continental Foothills, L.L.C. ("CFLLC") as the adjacent property owner to Tucson Electric Power ("TEP") Green Valley Substation conducted a meeting with TEP regarding TEP's request of Pima County to issue 115+KV power station permit in accordance with Section 18.07.040.B.5 of the Pima County Zoning Code, subject to certain variances.

Attached is a letter of agreement signed by TEP and Diamond Management, Inc. (as a member of Continental Foothills, L.L.C.) stipulating TEP's obligation to CFLLC relative to the expansion and upgrading of the substation facilities.

In conclusion, Diamond Management, Inc. is in support of TEP's substation request subject to the attached agreement. If possible, we would like to have this agreement as part of the Pima County Board of Supervisors' approval.

Sincerely,

Yoram Levy
Project Manager

YL/do
Attachment

DIAMOND MANAGEMENT, INC.
2200 East River Road, Suite 115
Tucson, Arizona 85718
602/577-0200

February 2, 1995

Mr. H. Duane Bock
Tucson Electric Power Company
P.O. Box 711
Tucson, Arizona 85702

Re: Tucson Electric Power/Green Valley Substation

Dear Duane:

On January 31, 1995 Yoram Levy and Kenneth Abrahams of Diamond Management, Inc. ("DMI") and H. Duane Bock and Sam Rugel of Tucson Electric Power ("TEP") met at the offices of DMI. DMI is a member of Continental Foothills, L.L.C., the owner of the property adjacent to the referenced substation. The following letter summarizes our understanding of responsibilities and obligations of TEP to DMI and/or its affiliates and/or successors in interest with regard to TEP permit requirements for an upgrade of the Green Valley substation from 46-14 KV to 138-14 KV resulting from said meeting.

TEP will provide:

- 10' high masonry wall (earth tone in color) on north, east and south sides of TEP substation. The wall is to be constructed 120 days from commencement of substation site work. Work will be deemed commenced with any ground modification activity beyond surveys and environmental/cultural resource studies.

- Landscape plan per Pima County requirements will be submitted to DMI for review and approval. This will include an appropriate tree planting scheme outside of the substation wall to the north, east and south as follows:

  - North to the proposed right-of-way of Continental-White House Canyon Road.

  - East extending off TEP property to the proposed Campbell Avenue right-of-way.

  - South to the TEP property line and an extension of that property line east to the proposed Campbell Avenue right-of-way.

Installation of such landscaping should follow within 60 days after a water source is available for irrigation within 200' of the substation.

- A proposed access easement location (both interim and permanent), road width and legal description for DMI review and approval.

DMI will provide upon DMI review and approval:

- A combined access and underground utility easement from Campbell Avenue to the TEP substation site.
- Water service (3/4" - 5/8" stub-out to be determined by TEP) and access to the stub-out within 200' the TEP substation at the time Continental Foothills Estates off-site construction occurs.
- Reasonable approval of landscape and wall improvement plans and specifications as provided by TEP, as described above.

To indicate your acceptance of this letter and the terms and conditions contained herein, please sign in the space provided below and return the original to me. An extra original has been included for your files. Should you require any additional information, please do not hesitate to contact me.

Thank you for your cooperation.

Sincerely,

Yoram Levy
Project Manager

YL/do
cc: K. Abrahams

AGREED AND ACCEPTED:

By: H. Duane Bock
Authorized Representative of TEP

Printed Name: H. Duane Bock

PIMA COUNTY PUBLIC WORKS
DEPARTMENT OF TRANSPORTATION AND FLOOD CONTROL DISTRICT
201 NORTH STONE AVENUE, THIRD FLOOR
TUCSON, ARIZONA 85701-1207

ANTONIO (TONY) C. PAEZ
DIRECTOR

(602) 740-6410
FAX (602) 620-1933

November 29, 1994

RCS Engineering
8765 E. Bear Place
Tucson, Arizona 85749

Attention: Bruce Wilson

Re: TEP green Valley Substation

Dear Mr. Wilson:

This office has reviewd your report on the proposed TEP substation in Green Valley and find it accpetable and well written. The few remining items could be addressed with a modified site plan. This site plan should include details of the rip-rap around the pad site as well as the proposed channel to the east of the substation. In order to return flow to as near as the sheet flow conditions as possible, the outlet of the channel should be revised to be flared with the width of the outlet doubling the channel width. The site plan should clearly show the area to be elevated and the location of the enclosure around the facility.

TEP would have to sign covenants which may include aknowledgment to maintian the eastern channel. Should it be more than a year before the construction starts, a new Floodplain Use Permit would have to be applied for.

Should you have any questions regarding this letter, feel free to call me at 740-6350.

Sincerely,

R. Terry Hendricks,
Principal Hydrologist,
Floodplain Management

cc: John Wallace

RTH:
C:\WP61\TERRY\REPORTS\GV-TEP.LTR